This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

Digitized by Google

Digitized by Google

Digitized by Google

MULHALL'S

DICTIONARY OF STATISTICS.

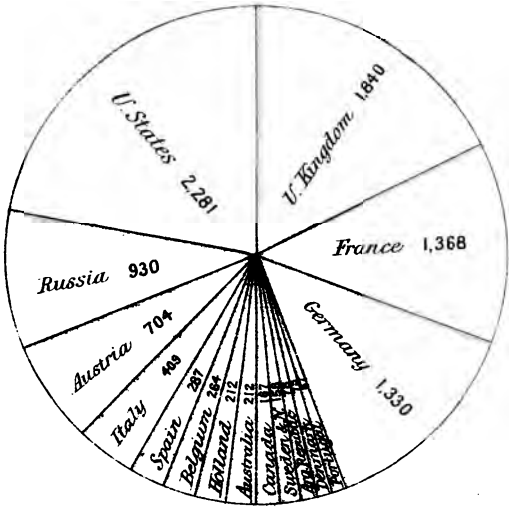
Digitized by Google

Ballantyne Press
BALLANTYNE, HANSON AND CO.
EDINBURGH AND LONDON

Digitized by Google

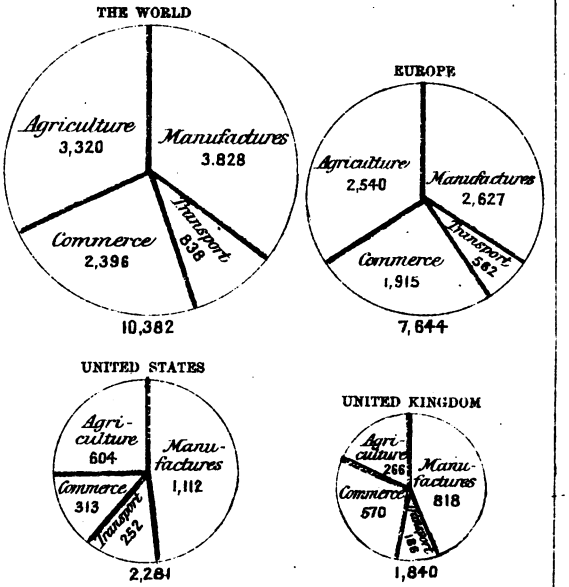
Digitized by Google

INDUSTRIES OF THE WORLD.



Total 10,382

The figures express in millions £ the aggregate annual industries.



The figures express in millions £ the aggregate annual industries.

Digitized by Google

MULHALL'S

DICTIONARY OF STATISTICS

BY

MICHAEL G. MULHALL, F.S.S.

AUTHOR OF

"THE PROGRESS OF THE WORLD," "THE BALANCE-SHEET OF THE WORLD,"

ETC. ETC.

"Je n'impose rien, je ne propose même rien : j'expose."

Dunoyer.

LONDON

GEORGE ROUTLEDGE AND SONS

BROADWAY, LUDGATE HILL

NEW YORK: 9 LAFAYETTE PLACE

1884

24712. e. 26.

[*All Rights reserved.*]

Digitized by Google

BODLEIAN LIBRARY
7 JAN 84
OXFORD.

Digitized by Google

PREFACE.

HITHERTO every science has had its Dictionary except Statistics, one of the reasons, perhaps, why so many philosophers deny this branch of study to be a science. This is the first Statistical Dictionary ever published in any language.

MICHAEL G. MULHALL.

19 ALBION STREET, HYDE PARK,
LONDON, 28*th October* 1883.

Digitized by Google

Digitized by Google

ORDER OF DIAGRAMS.

INDUSTRIES . .	*Frontispiece.*	INCOME . .	*To face page* 244
AGRICULTURE .	*To face page* 6	IRON AND COAL	„ 258
ARMY . . .	„ 22	MONEY . .	„ 320
BANKING . .	„ 32	RAILWAYS .	„ 330
CATTLE . .	„ 76	SHIPPING . .	„ 406
COMMERCE . .	„ 100	STEAM-POWER .	„ 424
DEBT . . .	„ 134	TAXATION .	„ 436
HOUSES . .	„ 236	WEALTH . .	„ 470

Digitized by Google

ERRATA.

Page 1, line 28, *for* "Spain, 12," *read* "Spain, 7."

Page 1, line 28, *for* "France, 12," *read* "France, 15."

Page 113, line 31, *for* "United States, 74," *read* "United States, 54."

Page 113, line 41, *for* "Total, 282," *read* "Total, 262."

Page 380, line 14, *for* "42,800," *read* "43,700."

In Brain-Measurement (page 56), the oz. should be 1½ per cent. higher.

Digitized by Google

DICTIONARY OF STATISTICS.

A

ABBEYS.—Those confiscated in England by Henry VIII. were 608, with a gross income of £141,000, equal to the rent of 720,000 acres of land.

ABLE-BODIED.—The proportion of men capable of bearing arms in various countries is as follows:—

	Per Cent. of Population.		Per Cent. of Population.		Per Cent. of Population.
England . .	23	Germany . .	24	Denmark . .	25
Scotland . .	22	Italy . . .	25	Sweden . .	25
Ireland . .	22	Belgium . .	25	Norway . .	24
France . .	27	Holland . .	25	United States	23
Austria . .	25	Spain . . .	26	Greece . . .	23

ACCIDENTAL DEATHS.—There are 20,400 persons killed by accident yearly in the United Kingdom, being almost 3 per cent. of all deaths. The ratio in the various countries is as follows:—

	Per 1,000 Deaths.		Per 1,000 Deaths.		Per 1,000 Deaths.
England . .	30	Germany . .	16	Belgium . .	17
Scotland . .	31	Russia . . .	6	Denmark . .	12
Ireland . . .	18	Austria . .	10	Sweden . .	26
United Kingdom . . .	28	Italy . . .	5	Norway . .	33
France . . .	12	Switzerland .	28	United States	39
		Spain . . .	12		

In England the ratio is rising very rapidly, viz.:—

Year.	Accidental Deaths.	Rate per 1,000 Deaths.
1860	9,225	22
1870	10,906	21
1878	16,176	30

In 20 years ending 1870, females were 26 per cent. of the victims.

Digitized by Google

ACCUMULATION.—The increase of wealth in the United Kingdom in ten years ending 1880 was 1540 millions—that is over £400,000 a day, or about threepence per inhabitant. It appears in the following items:—

	Value in Millions, £.	
	1870.	1880.
Houses . . .	1,620	2,240
Railways . . .	530	730
Shipping . . .	66	120
Bullion . . .	118	143
Land, cattle, &c. . .	2,400	2,400
Foreign investments .	920	1,110
Furniture, &c., &c. .	1,226	1,667
	6,880	8,410

See *Wealth, Income, Capital.*

AEROLITES.

Date.	Locality.	Weight (lbs.)	Remarks.
1748	Yenisey . . .	1,600	...
1783	Gran Chaco . .	32,000	Near Tucuman.
1784	Bendego, Brazil	17,000	...
1793	Graf Reinet . .	300	South Africa.
1803	Normandy . .	...	2000 red-hot stones.
1812	Prague . . .	...	200 hot stones.
1829	Bohnmelitz . .	103	Bohemia.
1866	Kuyahinza . .	670	With 1000 smaller.
1870	Greenland . .	49,000	Now at Copenhagen.
1871	Greenland . .	20,000	„ St. Petersburg.

The last two were found in the years expressed, but may have fallen centuries ago. That of Gran Chaco is 95 per cent. iron. The British Museum has an aerolite weighing 5 tons.

AERONAUT.—The greatest height attained was by Mr. Glaisher in an ascent from Wolverhampton, September 5th, 1862, when he rose to a distance of seven miles. Mr. Glaisher states that in 3500 balloon ascents only 15 deaths have occurred, that is, about four per thousand. See *Balloons.*

AGE.—A man's working life is divided into four decades:—

20 to 30 . . . bronze	40 to 50 . . . gold
30 „ 40 . . . silver	50 „ 60 . . . iron

Intellect and judgment are strongest between 40 and 50. The percentages of population to age in various countries are shown thus:—

Digitized by Google

A.

Country.	Percentage of Population.			Average Age of all Living: Years.
	Under 20 Years.	From 20 to 60.	Over 60.	
England . . .	46	47	7	27·1
Scotland . . .	46	45	9	27·4
Ireland . . .	46	43	11	28·6
France . . .	36	52	12	32·2
Germany . . .	43	49	8	28·0
Italy . . .	44	49	7	27·6
Austria . . .	43	50	7	27·7
Greece . . .	48	47	5	25·5
Spain . . .	42	52	6	27·2
Brazil . . .	46	45	9	27·3
Belgium . . .	40	50	10	29·7
Holland . . .	43	49	8	28·3
Denmark . . .	42	50	8	28·4
Sweden . . .	43	49	8	28·0
Norway . . .	43	48	9	28·0
United States . .	50	45	5	24·9

The Americans are the youngest, the French the oldest.

B.—Ages of Nations in Aliquot Parts.

Age.	United Kingdom (1871).	France (1876).	Germany (1871).	Austria (1870).	Italy (1871).	Greece (1870).
Under 5	13·3	9·8	12·7	13·2	13·8	14·4
5 to 20	32·5	25·9	30·8	30·2	29 8	33·2
20 to 40	28·9	29·7	29·8	30·6	30 2	32 0
40 to 60	17·3	22·7	19·0	19·5	19·2	14·8
Over 60	8·0	11·9	7·7	6·5	7·0	5·6
	100·0	100·0	100·0	100·0	100·0	100·0

Age.	United States (1870).	Spain (1866).	Brazil (1870).	Holland (1870).	Belgium (1866).	Sweden (1870).
Under 5	14·3	14·2	10·8	11·3	12·1	12·6
5 to 20	35·4	27·8	35·3	31·4	28 4	30·1
20 to 40	30·4	34·3	30·6	30 9	29·4	31·2
40 to 60	14·9	17·9	14·6	18·7	20·2	18·3
Over 60	5·0	5·8	8·7	7·7	9·9	7·8
	100·0	100·0	100·0	100·0	100·0	100 0

Digitized by Google

C.—Ages in United Kingdom.

Age.	England.		Scotland.		Ireland.	
	1841.	1871.	1851.	1871.	1841.	1881.
Under 5	13·2	13·5	12·8	13·0	15·2	11·1
5 to 20	32·9	32·2	33·1	33·1	36·8	34·8
20 to 40	30·7	29·5	30·1	28·5	29·2	26·3
40 to 60	16·0	17·4	16·4	16·7	14·5	17·2
Over 60	7·2	7·4	7·6	8·7	4·3	10·6
	100·0	100·0	100·0	100 0	100·0	100·0

D.—Ages in Cities.

Age.	London.	Paris.	Liverpool.	Manchester.	Birmingham.
Under 5 . . .	13·0	7·1	13·4	13·5	13·9
5 to 20 . . .	29·7	21·5	26·8	31·2	32·7
20 to 40 . . .	33·4	39·8	33·7	33·0	31·0
40 to 60 . . .	17·7	24·2	17·4	17·1	16·8
Over 60 . . .	6·2	7·4	8·7	5·2	5·6
	100·0	100·0	100·0	100·0	100·0

E.—Ages of Criminal Offenders.

Age.	England.		Age.	France.	
	Per Cent.	Ratio per 10,000 Inhabitants.		Per Cent.	Ratio per 100,000 Inhabitants.
Under 12	0·5	4	Under 20	18·0	22
12 to 21	19·8	81	20 to 40	54·0	31
21 to 40	55·2	141	40 to 60	23·0	14
40 to 60	20·6	92	Over 60	5·0	5
Over 60	3·9	35		100·0	15
	100·0	80			

The English table comprises all persons who passed through prison charged with any offence, the French only convicts of grave crimes.

Digitized by Google

AGRICULTURE.—This great branch of industry, including not only tillage, but also forestry and pasture, maintains 209 millions of people in the countries comprised under this review. It represents a capital of more than 20 milliards sterling, an annual product of about 3½ milliards.

The following tables sum up the chief features:—

A.—AGRICULTURAL CAPITAL.

	Value in Millions £.					Capital per Inhabitant.
	Land.	Timber.	Cattle.	Sundries.	Total.	
United Kingdom.	1,737	50	235	238	2,260	£65
France	2,624	182	212	224	3,242	88
Germany . . .	2,060	264	230	236	2,790	62
Russia	1,386	530	345	364	2,625	33
Austria	1,290	260	205	216	1,971	51
Italy	810	80	56	97	1,043	36
Spain.	660	70	57	62	849	51
Portugal . . .	158	10	11	26	205	46
Belgium	245	15	30	56	346	63
Holland	212	5	33	85	335	84
Denmark . . .	210	4	31	28	273	137
Sweden	312	130	42	30	514	114
Norway	110	62	21	10	203	102
Greece	105	7	6	14	132	70
Europe . .	11,919	1,669	1,514	1,686	16,788	54
United States . .	1,923	180	365	480	2,948	58
Canada	180	48	35	44	307	70
Australia . . .	182	10	66	70	328	120
Total . . .	14,204	1,907	1,980	2,280	20,371	56

The above does not include public lands in United States or Australia.

Digitized by Google

B.—Agricultural Income.

	Value of Products in Millions £.					Product per Head of Rural Population only.
	Grain.	Other Crops.	Cattle-farming.	Forestry.	Total.	
United Kingdom	68	58	137	3	266	£22 10 0
France	161	164	110	9	444	25 2 0
Germany . . .	129	183	132	12	456	20 1 0
Russia	266	71	145	27	509	9 2 0
Austria . . .	110	95	102	15	322	13 3 0
Italy	65	76	33	4	178	10 2 0
Spain	60	37	36	3	136	11 16 0
Portugal . . .	8	16	6	1	31	10 12 0
Holland . . .	7	19	19	...	45	21 4 0
Belgium . . .	14	17	13	1	45	19 7 0
Denmark . . .	15	8	14	...	37	24 5 0
Sweden . . .	16	11	14	11	52	17 6 0
Norway . . .	3	4	7	5	19	12 10 0
Greece	2	5	2	1	10	10 7 0
Roumania. . .	37	12	16	2	67	16 8 0
Europe . .	961	776	786	94	2,617	15 2 6
United States .	207	139	198	60	604	24 8 0
Canada . . .	22	9	21	6	58	21 3 0
Australia . . .	13	24	39	...	76	37 9 0
Total . .	1,203	948	1,044	160	3,355	16 3 0

See *Land, Tillage, Grain, Cattle,* &c.

C.—Agriculture of United Kingdom.

Class.	Quantity.	Value.
Grain, bushels . .	322,000,000	£68,200,000
Other crops . .	...	58,100,000
Meat, tons . .	1,090,000	76,800,000
Poultry and eggs .	...	10,600,000
Milk, butter, cheese .	...	39,300,000
Hides, wool, &c. .	...	10,200,000
		£263,200,000

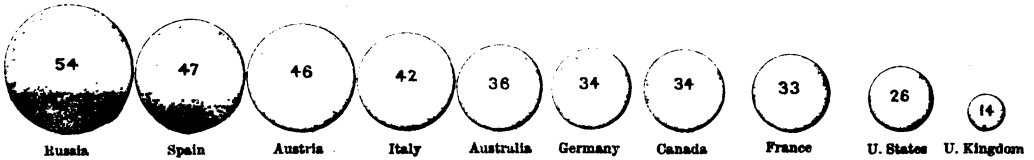
Digitized by Google

AGRICULTURE.

Agricultural and pastoral products.

The figures indicate the annual value of products in millions £

Percentage of agriculture in total industries.



See table of *Industries*, page 250.

Digitized by Google

Digitized by Google

The increase of pasture and decline of tillage since 1870 appear as follows:—

	United Kingdom—Acres.	
	1870.	1881.
Arable . .	24,075,000	22,878,000
Pasture . .	22,225,000	24,768,000
Total cultivated	46,300,000	47,646,000

The returns for the three kingdoms in 1881 were as follows:—

	Acres.			
	England.	Scotland.	Ireland.	United Kingdom.
Wheat . . .	2,738,000	75,000	154,000	2,967,000
Barley . . .	2,181,000	271,000	211,000	2,663,000
Oats	1,883,000	1,031,000	1,392,000	4,306,000
Beans, &c. . .	671,000	28,000	20,000	719,000
Grain Crops	7,473,000	1,405,000	1,777,000	10,655,000
Potatoes . . .	400,000	189,000	854,000	1,443,000
Turnips . . .	1,555,000	491,000	295,000	2,341,000
Vetches, &c. .	875,000	24,000	120,000	1,019,000
Fallow, &c. . .	3,772,000	1,482,000	2,166,000	7,420,000
Arable . .	14,075,000	3,591,000	5,212,000	22,878,000
Pasture . . .	13,504,000	1,172,000	10,092,000	24,768,000
Total . . .	27,579,000	4,763,000	15,304,000	47,646,000

The margin of profit over expenditure even in fair years is only four shillings per acre, viz.:—

	Per Acre.	Amount, Millions £.
Rent . . .	£1 4 0	58
Labour . . .	2 5 0	108
Team . . .	1 0 0	48
Taxes . . .	0 7 0	17
Seed . . .	0 10 0	11
Manure . . .	0 10 0	11
Profit	0 4 0	10
Value of products . . .		263

In the above table seed and manure are counted only for the arable area.

Digitized by Google

D.—Agriculture of United States.

	Acres.	Value of Crop.
Grain	119,100,000	£207,000,000
Cotton	13,600,000	67,000,000
Potatoes	1,900,000	10,500,000
Hay	24,000,000	54,000,000
Tobacco, &c.	685,000	7,600,000
Tillage	159,285,000	£346,100,000
Meat	3,460,000 tons.	102,000,000
Butter and cheese	610,000	45,500,000
Milk	...	27,500,000
Hides, wool, &c.	...	23,200,000
Total of agricultural products		£544,300,000

E.—Thirty Years of United States Agriculture.

States.	Farms, Thousands.				Acres, Millions.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
N. England	167	185	182	207	18	20	21	22
Middle	351	413	456	539	43	47	49	53
Southern	488	640	849	1,481	165	220	185	227
Western	441	776	1,131	1,707	63	109	141	209
Pacific	3	30	40	68	4	11	14	23
Total	1,450	2,044	2,658	4,002	293	407	410	534

States.	Grain, Million Bushels.				Value of Farms, Millions £.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
N. England	20	21	16	18	78	99	122	121
Middle	170	204	216	233	248	378	580	505
Southern	360	412	301	442	198	447	291	347
Western	310	572	808	1,898	157	444	895	1,070
Pacific	...	14	34	63	2	14	35	73
Total	860	1,223	1,375	2,654	683	1,382	1,923	2,116

States.	Bushels per Inhabitant.				Value of Farms per Inhab.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
N. England	7·3	6·7	4·6	4·5	£29	£31	£35	£34
Middle	25·2	25·0	22·1	20·2	37	46	60	44
Southern	43·2	40·1	26·7	29·0	24	44	26	23
Western	57·0	63·0	62·1	109·0	30	49	69	61
Pacific	...	28·0	49·0	57·0	20	30	50	66
Total	37·0	38·7	35·5	52·0	£30	£44	£49	£42

Digitized by Google

SUMMARY.

	VALUE, MILLIONS £.				VALUE PER INHABITANT.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
Farms . . .	683	1,382	1,923	2,116	£30	£44	£49	£42
Cattle . . .	114	226	316	378	5	8	8	8
Crops . . .	116	183	214	415	5	6	6	8
Implements .	31	51	69	103	1	2	2	2
Total . .	944	1,842	2,522	3,012	£41	£60	£65	£60

(The New England states are Maine, New Hampshire, Vermont, Rhode Island, Connecticut, and Massachusetts. The Middle are New York, New Jersey, Pennsylvania, Delaware, and Maryland. The Southern are Virginia, North and South Carolinas, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, Kentucky, and Tennessee. The Western, Ohio, Illinois, Missouri, Indiana, Iowa, Michigan, Wisconsin, Nevada, Montana, Minnesota, Kansas, Nebraska, Colorado, Dakota, New Mexico. The Pacific, California, Oregon, Washington, and Utah.)

In 1879 the agricultural products of the several groups of States were as follows:—

States.	Value (Millions £).	Ratio per Acre.	Ratio per Inhabitant.	Ratio to Agricultural Capital.
New England	21	£0·95	£5·2	12 per cent.
Middle . .	78	1·45	6·7	10½ „
Southern . .	131	0·60	8·6	26 „
Western . .	212	1·01	12·1	14 „
Pacific . .	16	0·70	14·5	15 „
Total . .	458	£0·90	£9·0	15 per cent.

The yield per acre is on the total area of farms, of which only 55 per cent. is "improved," so that the real yield per acre cultivated or improved is double the figures shown above.

Digitized by Google

F.—French Agriculture.

	Quantity in Millions.	Value.
Grain, bushels . .	726	£161,000,000
Wine, gallons . .	720	45,000,000
Potatoes, cwts. . .	190	28,500,000
Chestnuts, ,, . .	11	1,600,000
Vegetables ,, . .	21	15,200,000
Straw, tons . .	17	21,300,000
Hay, ,, . .	14	32,000,000
Cider, gallons . .	220	7,200,000
Beet-root, cwts. . .	160	7,500,000
Flax, oil, &c. . .	...	7,500,000
Tillage . .	...	£325,600,000
Meat, cwts. . .	18	55,000,000
Poultry and eggs .	...	14,000,000
Dairy products . .	...	31,000,000
Hides, wool, &c. .	...	10,000,000
Total . . .	...	£435,600,000

G.—German Agriculture.

	Quantity in Millions.	Value.
Grain, bushels . .	634	£129,000,000
Wine, gallons . .	70	4,200,000
Potatoes, tons . .	21	57,500,000
Hay, ,, . .	26	59,400,000
Straw, ,, . .	16	20,000,000
Beet-root ,, . .	11	9,200,000
Sundries . . .	...	33,000,000
Tillage . .	...	£312,300,000
Meat, cwts. . .	25	72,000,000
Hides, wool, dairy, &c.	...	60,000,000
Total . . .	...	£444,300,000

H.—Russian Agriculture.

	Quantity in Millions.	Value.
Grain, bushels . .	1,710	£266,000,000
Potatoes, cwts. . .	180	22,300,000
Flax and hemp, cwts.	8	13,000,000
,, seed ,, .	14	7,000,000
Beet-root ,, .	80	3,100,000
Hay, straw, &c. . .	...	26,000,000
Tillage . .	...	£337,400,000
Meat, cwts. . .	34	82,000,000
Hides, wool, dairy, &c.	...	63,000,000
Total . . .	...	£482,400,000

Digitized by Google

I.—Austrian Agriculture.

	Quantity in Millions.	Value.
Grain, bushels . .	550	£110,000,000
Potatoes, cwts. . .	160	20,000,000
Wine, gallons . .	310	15,200,000
Hay, tons . . .	15	30,000,000
Straw ,, . . .	14	14,000,000
Beet-root, tons . .	8	6,000,000
Vegetables, &c. . .	...	10,000,000
Tillage . .	...	£205,200,000
Meat, cwts. . .	19	52,000,000
Hides and wool . .	...	8,000,000
Dairy, &c. . . .	...	42,000,000
Total . . .	...	£307,200,000

	Area of Tillage (Millions of Acres).			Value of Crop (Millions £).		
	Austria.	Hungary.	Total.	Austria.	Hungary.	Total.
Grain . . .	16·4	20·1	36·5	53·7	56·4	110·1
Potatoes . .	2·4	1·1	3·5	16·0	4·0	20·0
Wine . . .	0·5	0·9	1·4	5·0	10·0	15·0
Beet . . .	0·7	0·4	1.1	4·0	2·0	6·0
Hay . . .	8·0	4·0	12·0	20·0	10·0	30·0
Straw . . .	...	...	...	7·0	7·0	14·0
Sundries . .	1·8	0·8	2·6	7·0	3·0	10·0
Total . .	29·8	27·3	57·1	112·7	92·4	205·1

K.—Italian Agriculture.

	Quantity in Millions.	Value.
Grain, bushels . .	293	£65,000,000
Wine, gallons . .	580	29,800,000
Olive oil ,, . .	31	6,100,000
Chestnuts, cwts. .	12	4,800,000
Rice ,, . .	14	7,000,000
Fruit, &c. . . .	...	28,600,000
Tillage . .	...	£141,300,000
Meat, cwts. . .	5	16,000,000
Hides and wool . .	...	3,000,000
Dairy, &c. . .	...	14,000,000
Total . . .	...	£174,300,000

Digitized by Google

L.—Agriculture in Spain and Portugal.

	Quantity in Millions.			Value in Millions £.		
	Spain.	Portugal.	Total.	Spain.	Portugal.	Total.
Grain, bushels .	295	30	325	60	8	68
Wine, gallons .	320	80	400	19	10	29
Oil, ,, .	15	5	20	3	1	4
Fruit, &c. . .	...	...	...	15	5	20
Tillage . . .	...	...	...	97	24	121
Meat, cwts. . .	6	1	7	16	3	19
Sundries . . .	...	...	...	20	3	23
Total . . .	...	...	...	133	30	163

M.—Agriculture in Belgium and Holland.

	Quantity (Millions).			Value (Millions £)		
	Belgium.	Holland.	Total.	Belgium.	Holland.	Total.
Grain, bushels	68	37	105	14	7	21
Potatoes, cwts.	34	22	56	5	3	8
Hay, ,,	13	40	53	2	6	8
Sundries . .	...	...	...	10	10	20
Tillage . .	...	...	...	31	26	57
Meat, cwts. .	2	2	4	8	8	16
Dairy, &c.. .	...	...	...	5	11	16
Total . .	...	...	...	44	45	89

N.—Agriculture in Scandinavia.

	Quantity (Millions).				Total Value (Millions £).
	Denmark.	Sweden.	Norway.	Total.	
Grain, bushels .	75	80	15	170	34
Potatoes, cwts. .	5	20	10	35	5
Hay, tons . . .	3	3	1	7	14
Sundries . . .	...	...	...	...	4
Tillage . . .	...	...	...	...	57
Meat, cwts. . .	2	3	1	6	19
Dairy, &c. . .	...	...	...	...	16
Total . .	...	...	...	...	92

Digitized by Google

O.—AGRICULTURE IN CANADA.

	Quantity in Millions.	Value (Millions £).	Value per Inhabitant.
Grain, bushels . .	130	22	£5·0
Meat, cwts. . .	4	10	2·3
Dairy products . .	...	9	2·1
Sundries . . .	...	11	2·5
Total . .	...	52	£11·9

P.—AUSTRALIAN AGRICULTURE.

	Quantity in Millions.	Value (Millions £).	Value per Inhabitant.
Grain, bushels . .	60	13	£4·4
Wool, lbs. . . .	390	20	7·4
Meat, tallow, &c. .	...	16	6·0
Dairy products . .	...	6	2·2
Potatoes, cwts. . .	8	2	0·7
Hay, wine, fruit, &c. .	...	19	7·0
Total . .	...	76	£27·7

AIR.—In its pure state it is composed thus :—

Nitrogen	77
Oxygen	21
Other components	2
	100

The percentage of oxygen varies as follows :—

Locality.	Percentage.	Locality.	Percentage.
Sea-shore . . .	21·00	Mines	20·50
Confined houses . .	20·75	When candles go out .	18·50

The following table shows how oxygen varies with climate—

Ben Lomond .	20·940	Mediterranean	20·947	Paris . . .	20·956
Atlantic . .	20·942	Madrid. . .	20·949	Geneva . . .	20·956
Lyons . . .	20·942	Berlin . . .	20·953	Andes . . .	20·963

Air travels in England in healthy years about 4½ miles an hour, and 3½ in unhealthy. The percentage of carbonic acid ranges thus :—

In country . .	·03	In fogs . . .	·07
„ town . . .	·04	„ crowded lanes .	·13
„ hospitals . .	·05	„ theatres . .	·30

Each adult inhales a gallon of air per minute, and consumes daily 30 oz. of oxygen. For the conversion of this oxygen a certain amount of food is required—say 13 oz. of carbon for a male, and 11 oz. for a female, equivalent to 3 lbs. bread and 2½ lbs. respectively.

Digitized by Google

The proper allowance of air in barracks is 600 cubic feet per man in Europe, and 1000 in India: for hospitals, 1200 cubic feet per bed in Europe, and 1800 in India. Horses require in England 1600 cubic feet each, or nearly as much as three men.

ALCOHOL.—The degrees in wines and liquors are:—

Beer	4·0	Gooseberry	11·8	Ratafia	21·0
Porter	4·5	Champagne	12·2	Madeira	21·0
Ale	7·4	Claret	13·3	Port	23·2
Cider	8·6	Burgundy	13·6	Curacoa	27·0
Perry	8·8	Malaga	17·3	Aniseed	33·0
Elder	9·3	Lisbon	18·5	Maraschino	34·0
Moselle	9·6	Canary	18·8	Chartreuse	43·0
Tokay	10·2	Sherry	19·0	Gin	51·6
Rhine	11·0	Vermouth	19·0	Brandy	53·4
Orange	11·2	Cape	19·2	Rum	53·7
Bordeaux	11·5	Malmsey	19·7	Irish Whisky	53·9
Hock	11·6	Marsala	20·2	Scotch	54·3

Spirits are said to be "proof" when they contain 57 per cent. The maximum amount of alcohol, says Parkes, that a man takes daily without injury to his health is that contained in 2 oz. brandy, ¼ pint of sherry, ½ pint claret, or 1 pint of beer.

ALLOY.—In British gold one part in 12, in silver 18 in 240. The standard of purity of the moneys of all countries will be found under the title *Coins*.

ALLUVIAL DEPOSITS.—The weight of these deposits for every 1000 gallons of water is as follows:—

	lbs.		lbs.		lbs.
Loch Katrine	¼	Danube	2	Wear	16
Windermere	½	Garonne	2	Ganges	22
Severn	1	Rhine	2	Cheltenham	134
Avon	1	Mersey	3	Harrogate	157
Tunbridge	1½	Thames	4	Oxus	250
Spree	1½	Mississippi	6	Seidlitz	321
Geneva	2	Spa	14	Atlantic	448

ALPACA.—This wool was first manufactured at Saltaire, near Leeds, in 1836, and the consumption in England has risen as follows (annual average):—

Years.	Cwts.	Value.
1840-45	12,900	£ 96,000
1850-55	19,200	270,000
1860-65	30,150	340,000
1875-80	34,700	390,000

Digitized by Google

AMPUTATION.

A.—Mortality in Various Hospitals: Per Cent.

London	37·8	Edinburgh	43·3
Paris	60·0	Glasgow	36·0
Zurich	46·0	English rural	17·8

In such German hospitals as have adopted the Listerian method, invented by Professor Lister of Glasgow, the death rate after amputation has fallen to 4·7.

B.—London and Rural Compared.

	Death-Rate of Patients, Per Cent.		
	London.		Rural.
University	25·7	Tewkesbury	3·8
St. Bartholomew's	36·6	St. Leonard's	10·0
Guy's	38·2	St. Alban's	14·2
St. George's	38·8	Ashford	20·0
Whitechapel	47·3	Stockton	25·0

C.—Nature of Amputation.

	Death-Rate, Per Cent.			
	English Rural. 1859–78.	Glasgow. 1850–74.	Glasgow. 1795–1838.	Guy's. 1854–61.
Arm	8·1	34·0	48·0	20·0
Leg	15·5	45·0	68·0	39·0
Thigh	33·3	52·0	92·0	50 0
General	17·8	36·0	51·0	38·2

D.—Amputations in War.

	Death-Rate, Per Cent.	
	Arm.	Leg or Thigh.
Peninsula	12 9	20·8
Waterloo	11·6	26·8
Crimea	15·5	50·2

ANCHORS.—The weight of anchors and chain cables for vessels is as follows:—

Vessel, tons.	Anchors, tons.	Heaviest in cwts.	Cable, inches.	Cable, length in fathoms.
200	3	13	1·0	180
500	6	25	1·5	270
1000	9½	42	1·9	300
2000	18	77	2·1	300

It is usual for vessels to carry 7 anchors, 4 of the maximum weight prescribed above.

Digitized by Google

ANIMALS.

	Weight (lbs.).	Years of Life.		Weight (lbs.).	Years of Life.
Rabbit	5	5	Cow	750	25
Dog	10	12	Ox	900	25
Sheep	70	12	Horse	1,000	27
Pig	160	10	Camel	1,200	40
Lion	500	40	Elephant	6,000	100

ANTHROPOMETRY.

A.—Height in Inches.

Age.	English Male.	American Male.	Belgian.	
			Male.	Female.
10	51·8	51·7	50·1	49·2
15	62·2	62·3	59·6	58 6
20	67·5	67·4	65·8	62·0
24	67·7	67·9	66·2	62·1
30	67·9	68·1	66·4	62·2
40	68·0	68·1	66·4	62·2
50	67·9	...	66·4	62·2
60	67·7	...	66·0	61·8
70	67·2	...	65·4	61·3

B.—Weight in Lbs.

Age.	English Male.	American Male.	Belgian.	
			Male.	Female.
10	67	66	56	51
15	103	105	91	88
20	143	147	131	117
24	148	147	146	123
30	156	150	146	122

The average weight of 20,000 men and women at Boston in 1864, and of 22,000 weighed at Cincinnati in 1882, was as follows :—

	Men.	Women.
Boston	142 lbs.	125 lbs.
Cincinnati	154 „	131 „

There was no account taken of age.

Digitized by Google

C.—Height According to Class (England).

Age.	Inches.			
	Affluent.	Artisan.	Farm Labourer.	General.
10	52·9	50·7	50·9	51·8
15	62·9	61·4	61·8	62·2
20	68·3	66·5	66·9	67·5
24	68·4	66·6	67·5	67·7
30	68·5	66·8	67·6	67·9
40	68·7	67·1	67·6	68·0
50	68·1	66·6	67·8	67·9
60	68·1	66·5	68·0	67·7
70	68·5	66·5	69·9	69·2

D.—Weight According to Class (England).

Age.	Lbs.			
	Affluent.	Artisan.	Farm Labourer.	General.
10	69	64	67	67
15	107	96	101	103
20	146	136	144	143
24	148	143	152	148
30	160	149	158	156
40	170	154	161	164
50	172	149	166	164
60	170	138	171	162

In the preceding tables height is without shoes, but weight includes clothing. The Laplanders are the shortest people in Europe—males, 59; females, 57 inches. The Boston *Journal of Chemistry* gives the average height of adult males as follows:—

	Inches.		Inches.
American Indian	67·93	Russian	66·39
Yankee	67·67	French	66·28
Scotch	67·07	Mexican	66·11
English	66·58		

E.—Difference of Sexes (Europe).

	Male.	Female.		Male.	Female.
Height	100	94	Skull	100	88
Size	100	93	Brain	100	91
Weight	100	84	Strength	100	67

Digitized by Google

F.—Danson's Table of Convict-Males.

Age.	Height, Inches.		Weight, Lbs.	
	1858.	1878.	1858.	1878.
18	64·3	64·1	122	125
20	65·2	65·1	133	137
22	66·2	65·7	139	142
24	65·9	65·4	142	141
26	66·2	65·6	142	143
28	66·7	65·7	143	144
30	66·4	65·5	142	144

G.—Chest and Strength (England).

Age.	Chest, Inches.	Drawing Strength, Lbs.	Age.	Chest, Inches.	Drawing Strength, Lbs.
10	26·0	35	30	36·0	80
15	29·5	48	40	36·2	77
20	34·8	73	50	36·5	75
24	35·8	78	60	...	70

H.—Chest Measurement of British Army.

Over 40 inches	4·3
38 to 40	20·4
36 to 38	41·8
35 to 36	17·8
Under 35	15·7
	100·0

I.—Height of British Army (1882).

	English.	Scotch.	Irish.
Over 6 feet . . .	0·6	1·2	0·3
5·10 to 6 feet . .	11·0	11·2	8·3
5·6 to 5·10 . . .	41·1	42·6	36·1
Under 5 feet 6 inches .	47·3	45·0	55·3
	100·0	100·0	100·0

K.—Army Measurement (Stature) (1860).

	Inches.		Inches.		Inches.
Italian . .	65·0	Austrian . .	66·5	Irish . . .	68·0
Spaniard . .	65·5	Belgian . .	66·9	Scotch. . . .	68·5
French . .	66·0	Russian . .	67·0	Swede. . . .	68·9
Hungarian .	66·1	English . .	67·5	Norwegian .	69·0

Digitized by Google

The British and Italian armies compare as follows in ratios of height—

Inches.	Percentage. British.	Italian.
Under 65	5	34
65 to 67	35	35
Over 67	60	31
	100	100

No less than 12 per cent. of the British army are up to or over 70 inches in height.

APOPLEXY.—This disease is becoming more prevalent in England, the number of deaths from this cause per million inhabitants rising as follows:—

	Per Million Inhabitants.
1850–66	457
1867–70	504
1871–73	517
1874–76	551

It has been accompanied with an increase in the rate of *insanity* (q.v.)

APPLES.—The crop in Great Britain averages 85,000 tons, valued at £10 per ton: about 12 million gallons of cider are made yearly. The production of cider in France averages 220 million gallons.

The orchards of Great Britain cover 180,000 acres; an acre with 40 good apple trees will produce 1200 gallons of cider. Great Britain imports 900,000 barrels of apples yearly from United States and Canada.

AQUEDUCTS.—Rome, in the time of the Cæsars, had 9 aqueducts, measuring 249 miles in the aggregate: they poured into the city 320 million gallons daily, or 200 gallons per inhabitant. The great aqueduct of Peru, built by the Incas, was 360 miles long. Among modern works the most famous are:—

Name.	Miles.	Million Gallons Daily.	Cost of Work.
Croton (New York)	41	88	£1,800,000
Madrid	47	40	2,300,000
Marseilles	51	60	450,000
Glasgow	34	50	1,550,000
Washington	16	90	...

See *Water Supply.*

Digitized by Google

AREA.

	Thousand Square Miles.	Millions of Acres.	Acres per Inhabitant.
England	58·3	37	1·4
Scotland	30·7	19½	5·2
Ireland	31·9	20½	4·0
United Kingdom	120·9	77	2·2
France	201·1	129	3·4
Germany	212·1	136	3·0
Russia	2,261·7	1,448	18·0
Austria	144·6	93	4·2
Hungary	124·4	80	5·0
Italy	114·3	73	2·5
Spain	182·8	117	7·1
Portugal	36·5	23	5·2
Belgium	11·4	7	1·3
Holland	20·5	13	3·2
Denmark	14·6	9	4·5
Sweden	171·0	109	24·0
Norway	122·3	78	40·0
Switzerland	16·0	10	3·6
Greece	19·9	13	8·0
Roumania	48·3	31	5·8
Servia	20·9	13	7·2
Turkey	62·0	40	9·1
Europe	3,905·3	2,499	8·0
United States	3,603·9	2,306	44·0
Canada	3,372·3	2,158	475·0
Brazil	3,288·0	2,104	232·0
China	3,924·6	2,512	8·0
Asiatic Russia	6,179·0	3,955	410·0
Australia	3,104·0	1,986	666·0
India	1,482 0	948	4·0

ARMADA.—That sent by Philip II. in 1588 for the intended conquest of England, and commanded by the Duke of Medina, comprised—

132 ships,	10,854 seamen,
3,165 cannon,	23,200 soldiers.

The British fleet under Lord Howard, supported by Drake and Hawkins, consisted of—

	Royal Navy.	Vessels Hired.	Total.
Ships	41	135	176
Tonnage	16,000	18,500	34,500
Seamen	8,200	6,600	14,800

The Spaniards lost 35 ships and 13,600 men.

Digitized by Google

ARMY.—The standing armies of Europe have increased 60 per cent. in 50 years:—

A.

	Army (thousands).			Soldiers per 10,000 Inhabitants.		
	1831.	1851.	1881.	1831.	1851.	1881.
Great Britain . .	102	129	189	42	46	54
France . . .	314	365	496	98	104	131
Germany . . .	331	346	445	121	105	99
Russia . . .	539	644	841	101	103	111
Austria . . .	271	282	268	104	94	72
Italy	75	142	386	44	71	134
Spain	46	87	90	40	62	55
Portugal . . .	28	28	33	77	73	76
Belgium . . .	20	40	46	55	92	84
Holland . . .	23	50	65	87	171	162
Denmark . . .	33	25	36	292	168	187
Sweden and Norway .	52	57	60	131	114	91
Europe . . .	1,834	2,195	2,955	87	92	98

The following tables show the present military condition of nations:—

B.—Army in Thousands of Men.

	Infantry.	Cavalry.	Artillery.	Train, &c.	Total.	No. of Field-Pieces.
Great Britain . .	125	18	34	12	189	702
France . . .	283	69	69	75	496	1,938
Germany . .	305	67	54	19	445	2,040
Russia . . .	626	86	109	20	841	2,278
Austria . . .	175	51	28	14	268	1,540
Italy . . .	257	34	60	35	386	500
Spain . . .	60	13	10	7	90	348
Portugal . .	24	3	4	2	33	92
Holland . . .	44	4	14	3	65	150
Belgium . . .	31	5	8	2	46	204
Denmark . . .	28	2	5	1	36	106
Sweden and Norway	44	7	7	2	60	300
Greece . . .	58	3	5	2	68	96
Roumania . .	19	3	6	2	30	180
Europe . .	2,079	365	413	196	3,053	10,474
United States .	12	8	3	4	27	100
Total .	2,089	373	416	200	3,080	10,574

Digitized by Google

C.—Military Strength, Army and Navy, in 1869 and 1881.

	Men (Thousands).		Cost (Millions £).		Total Army and Navy Expenditure. Ratio to National Budget.	
	1869.	1881.	1869.	1881.	1869.	1881.
Great Britain . . .	269	247	26·4	27·9	35·1	33·6
France	493	565	25·0	29·6	32·0	24·4
Germany	380	460	12·9	22 5	25·8	26·5
Russia	876	871	21·5	29·5	33·1	37·0
Austria	283	278	10·4	12·6	22·9	16·7
Italy	199	401	7·5	10·4	16·3	16·8
Spain	174	102	5·4	6·3	19·3	19·0
Portugal	30	37	1·0	1·2	24·3	15·1
Holland	82	72	2·5	2·6	27·8	26·0
Belgium	73	46	1·4	1·8	20·0	15·6
Denmark	44	37	0·6	0·9	28·0	36·0
Sweden and Norway	60	69	1·0	1·8	22 5	25·7
Europe	2,963	3,185	115·6	147·1	26·1	25·3
United States . .	64	35	20·1	9·4	30·2	17·2
The World . . .	3,027	3,220	135·7	156·5	27·0	24·6

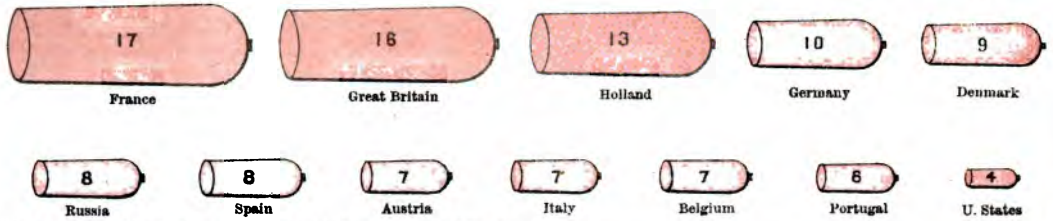
D.—Army and Navy Strength and Expenditure.

	Combatants per 10,000 Inhabitants.		Annual Cost per Combatant.		Expenditure to Population. Shillings per Inhabitant.	
	1869.	1881.	1869.	1881.	1869.	1881.
Great Britain . . .	87	71	£98	£113	17	16
France	130	159	51	52	13	17
Germany	98	102	34	49	7	10
Russia	128	116	25	34	6	8
Austria	82	73	37	45	6	7
Italy	76	141	38	26	6	7
Spain	108	62	31	62	7	8
Portugal	70	85	33	32	5	6
Holland	234	180	31	36	13	13
Belgium	146	83	20	40	6	7
Denmark	250	178	14	24	7	9
Sweden and Norway	103	105	17	26	4	6
Europe	106	106	39	46	8	10
United States . .	17	7	314	270	11	4
The World . . .	94	92	45	49	9	8½

Digitized by Google

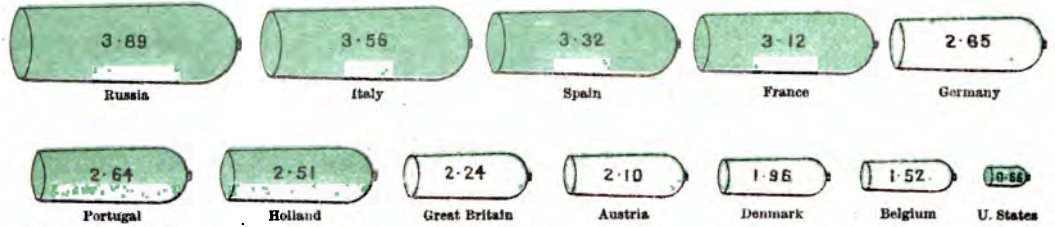
ARMY AND NAVY EXPENDITURE.

Cost per inhabitant.



The figures indicate the number of shillings per inhabitant per annum.

Cost compared with national earnings.



The above shows, for example, that Russia spends almost 4 per cent. of the national earnings in military expenditure, and Great Britain nearly 2¼ per cent.

Digitized by Google

Digitized by Google

The ratio of combatants to population in Europe is exactly the same as in the year preceding the Franco-German war, but the expenditure for armies and navies having risen 30 per cent., is now two shillings per inhabitant higher, although in Great Britain it has declined a shilling. The armies and navies of the Continent absorb ten days' earnings of the population each year, those of Great Britain only seven days' earnings.

E.—British Army at Various Periods.

Year.	Men.	Per 10,000 Inhabitants.	Year.	Men.	Per 10,000 Inhabitants.
1661	5,200	9	1810	306,700	171
1688	28,000	51	1830	108,700	46
1730	17,000	30	1850	138,800	52
1764	40,000	53	1860	229,500	79
1792	57,300	60	1881	189,000	54

F.—Cost of British Army and Navy.

Year.	Expenditure.	Cost per Inhabitant.	National Earnings (Millions £).	Ratio of Military Expenditure to National Earnings.
1810	£52,860,000	£2 18 8	250	21·2
1830	13,915,000	0 11 6	350	4·0
1850	15,392,000	0 11 5	610	2·5
1870	24,623,000	0 16 2	961	2·5
1881	27,954,000	0 16 0	1,247	2·2

G.—British Army and Volunteers.

The effective strength has increased since 1860 as follows:—

Year.	Army.	Volunteers.	Total.	Percentage of Population.
1860	221,604	106,400	328,004	1·13
1870	180,444	170,700	351,144	1·11
1881	188,986	206,535	395,521	1·13

The various arms are made up as follows:—

Arm.	Army.	Volunteers.	Total.
Infantry	126,400	159,500	285,900
Cavalry	17,300	600	17,900
Artillery	35,200	37,800	73,000
Engineers, &c. . . .	11,300	8,800	20,100
	190,200	206,700	396,900

According to Napoleon Bonaparte the proportions of an army should be 70 per cent. infantry, 17 per cent. cavalry, and 13 per cent. between artillery, engineers, and train. The regular army has 9400 officers, and 16,100 petty officers.

Digitized by Google

The army is composed as follows:—

Nationality.		Religion.	
English	70	Church of England	64
Irish	20	Roman Catholic	24
Scotch	8	Presbyterians	8
Colonial	2	Dissenters	4
	100		100

Age.		Height.	
Under 18 years	2	Under 65 inches	5
18 to 30 years	74	65 to 67 inches	35
30 „ 40 „	20	67 „ 70 „	48
Over 40 „	4	Over 70 „	12
	100		100

The composition of the army has changed very remarkably in the past 20 years, viz.:—

	1861.	1871.	1881.
English	56·8	64·1	68·8
Irish	31·2	24·9	20·4
Scotch	9·1	8·6	8·0
Colonial	2·9	2·4	2·8
	100·0	100·0	100·0

The education of the men shows a great advance since 1860, viz.:—

	1860.	1881.
Able to read	84 per cent.	96 per cent.
Able to write	68 „	93 „

The number of new recruits in 1880 was 25,600, of whom one-third were from militia regiments. In the same year 3,284 men deserted, the ratio of desertion to strength in the various arms being as follows:—

Engineers	0·52	Infantry	1·80
Army train	0·91	Cavalry	1·98
Artillery	1·74	General average	1·81

There were 3964 invalided, say 2·10 of the army strength. The death-rate was unusually high, 2·20, owing to colonial wars. The army has 25,100 horses, of which 11,354 for cavalry, and 12,380 for artillery. In January 1881 the forces were distributed thus — United Kingdom, 91,200; India, 69,650; Colonies, 28,136.

Digitized by Google

In active service the death-rate among officers is heavier than among the rank and file. The Duke of Wellington's army-roll from 1811 to 1814 showed—

	Officers.	Men.
Killed	14·5 per cent.	10·2
Wounded	81·0 „	49·0
Died of disease	13·0 „	38·0

Besides the army and volunteers there are 142,000 militia and yeomanry, bringing up our total strength to 538,000 men, or 1½ per cent. of the population of the United Kingdom.

H.—CONSCRIPTION FOR FRENCH ARMY.

Years.	Annual Average.	Per 1,000 Inhabitants.
1816–23	40,000	1·33
1824–29	60,000	1·90
1830–52	80,000	2·40
1853–58	140,000	3·90
1859–68	100,000	2·70
1872–80	160,000	4·25

ARTESIAN WELLS.—They were known at Thebes 2000 years before the Christian era. In modern times that of Grenelle, near Paris, is the most famous, having taken eight years in boring, 1833–41; it gives 700,000 gallons daily, the water rising 32 feet above the surface, with a temperature of 81½° Fahr.

Well.	Depth, Feet.	Diameter, Inches.	Gallons Water per Minute.	Cost of Well.
Grenelle	1,798	3·74	484	£14,550
Passy	1,923	27·60	1,980	40,000
Kissengen	1,880	4·00	600	7,000
St. Louis, U.S.	2,200	...	...	2,000
Chicago	700	...	820	...
Calais	1,138	...	...	3,560
Donchery	1,215	...	...	3,045
Trafalgar Square	393	...	500	...
Lille	592	...	...	320
Algeria	177	...	1,130	...
Elbeuf	492	2·95	66	...
St. Denis	262	2·28	28	...

There are 78 of these wells in England, varying from 100 to 1000 feet. Several have been sunk in China more than 1000 feet, at a cost of only seven shillings per foot.

Digitized by Google

ARTILLERY.—There are about 37,000 pieces of cannon, of which only 20,000 can be said to be in use.

A.

	Army.	Navy.	Fortifications, &c.	Total.
Great Britain	702	1,480	2,000	4,182
France	1,938	2,834	2,800	7,572
Germany	2,040	570	2,770	5,380
Russia	2,278	836	2,010	5,124
Austria	1,540	320	1,000	2,860
Italy	500	480	500	1,480
Spain	348	525	300	1,173
Portugal	92	178	110	380
Holland	150	560	120	830
Belgium	204	...	40	244
Denmark	106	245	170	521
Sweden and Norway	300	672	100	1,072
Greece	96	70	110	276
Roumania	180	36	94	310
Turkey	650	200	100	950
Europe	11,124	9,006	12,224	32,354
United States	100	1,055	3,000	4,155
Brazil	50	166	200	416
Japan	120	149	100	369
Total	11,394	10,376	15,524	37,294

At the close of the Franco-German war the Germans took from the French 7234 pieces of cannon, including 3485 field-pieces, and 3300 fortress guns. At the battle of Waterloo the British artillery fired 9467 rounds, or one for every Frenchman killed. The progress of gunnery in the last ten years is shown as follows:—

1872. First Woolwich infant—35 ton, 16 feet, shot 700 lbs., powder 120 lbs. It sent a Palliser shot through 18½ inches iron and 12 of teak.
1874. Second Woolwich infant—80 ton, 27 feet, shot 1650 lbs., powder 300 lbs.
1876. Third Woolwich infant—81 ton, shot 1250 lbs., went through 50 feet sand.
1877. Armstrong guns, 100 ton, for Italian ironclad *Duilio*.
1878. Four similar guns for the British Government.

The cost of heavy guns is as follows, per ton.

Cast iron	£ 21	Krupp	£170
Armstrong	100	Whitworth	175

Digitized by Google

B.—Initial Velocity.

Gun.	Powder (lbs.)	Shot (lbs.)	Velocity (feet).
Rifle, 6-inch . .	16	35	1,917
,, ,, . .	12	71	1,355
,, ,, . .	11	107	1,107
,, 7-inch . .	13	100	1,130
Smooth 9-inch . .	15	104	1,254

C.—Cannon of Middle Ages.

Name.	Shot (lbs.)	Powder (lbs.)	Gun (cwts.)	Length (feet).
Cannon . .	64	32	72	12
Serpentine .	52	26	62	12
Culverin . .	19	15	40	12
Demi-culverin .	10	8	20	10
Falcon . .	2	2	6	7

Famous Pieces of Cannon.

Date.	Name.	Place.	Tons.
1430	Dulle Griete . .	Holland . .	14
1450	Mons Meg . .	Edinburgh .	6
1464	Mahomet . .	Turkey . .	20
1548	Malik Mydan . .	India . .	40
1586	Czar Pooshka . .	Moscow . .	39
1628	Dhool-Dhanee . .	India . .	30

ASSES.—The number, compared to population, in various countries, is as follows :—

	No.	Per 1000 Inhabitants.
United Kingdom . .	337,000	10
France	406,800	11
Austria	96,000	3
Italy	501,600	17
Spain and Portugal .	2,510,000	125
Greece	94,000	55
Belgium and Holland .	15,000	2
Germany . . .	40,000	1
Egypt	88,000	18

The number has increased in the United Kingdom as follows :—

	1850.	1880.
Great Britain . .	130,000	150,000
Ireland . . .	141,000	187,000
United Kingdom .	271,000	337,000

Digitized by Google

ASSESSMENTS OF INCOME.—The number of persons assessed in Great Britain down to 1850, and the United Kingdom since that date, have been as follows:—

	Persons Assessed.		Per Million Inhabitants.	
Year.	Over £5000.	£200 to £5000.	Over £5000.	£200 to £5000.
1812	409	39,356	34	3,280
1850	1,181	64,208	56	3,059
1860	1,558	83,972	53	2,896
1870	2,080	128,295	67	4,139
1880	2,954	207,476	88	6,225

The following tables are based on the Probate Court returns, the valuation of houses, and other sources:—

A.—Income of England and Wales.

Class.	No. of Families.	Average Income.	Amount, Millions £.
Rich . . .	193,200	£1,500	290
Middle . . .	1,531,000	250	383
Working . .	3,498,000	105	367
Total .	5,222,200	200	1,040

B.—Income of Scotland.

Class.	No. of Families.	Average Income.	Amount, Millions £.
Rich . . .	24,200	£1,250	30
Middle . . .	193,400	255	49
Working . .	529,200	85	45
Total .	746,800	165	124

C.—Income of Ireland.

Class.	No of Families.	Average Income.	Amount, Millions £.
Rich . . .	14,400	£970	14
Middle . . .	172,000	200	34
Working . .	845,600	45	38
Total .	1,032,000	84	86

D.—Income of United Kingdom.

Class.	No. of Families.	Average Income.	Amount, Millions £.
Rich . . .	231,800	£1,440	334
Middle . . .	1,896,400	245	466
Working . .	4,872,800	92	450
Total .	7,001,000	180	1,250

Digitized by Google

E.—INCOME OF FRANCE.

Class.	No. of Families.	Average Income.	Amount, Millions £.
Rich	158,210	£800	127
Middle	1,666,700	200	333
Working	5,879,310	85	505
Total	7,704,220	125	965

F.—INCOME OF GERMANY.

Class.	No. of Families.	Average Income.	Amount, Millions £.
Rich	120,810	£730	88
Middle	686,250	160	110
Working	8,581,900	76	652
Total	9,388,960	90	850

G.—INCOME OF ITALY.

Class.	No. of Families.	Average Income.	Amount, Millions £.
Rich	30,990	£520	16
Middle	392,000	90	35
Working	5,243,010	45	241
Total	5,666,000	52	292

H.—INCOME OF SPAIN.

Class.	No. of Families.	Average Income.	Amount, Millions £.
Rich	25,120	£880	22
Middle	212,300	110	23
Working	3,261,180	43	140
Total	3,498,600	53	185

I.—LANDOWNERS OF AUSTRIA-HUNGARY.

Class.	Land-Tax.	No. of Owners.
1st	£40	56,514
2d	20 to 40	162,218
3d	8 to 20	584,300
4th	4 to 8	675,100
5th	under £4	4,673,092
		6,151,224

The incomes of other countries cannot be classified. See *Income.*

ASSIGNATS.—The amount issued by the first French Republic reached in 1790 the nominal sum of 360 millions sterling; they became so depreciated that a pair of boots cost £300, and a pound of butter £30.

Digitized by Google

ASYLUMS.

	United Kingdom.	France.
No. of asylums	652	1,105
No. of beds	104,000	120,300
Maintenance	£2,600,000	£2,760,000

See *Blind, Deaf and Dumb.*

B

BACON.—See *Meat, Pigs.*

BALANCE OF TRADE.—The imports of all nations during 20 years ending 1880 amounted to 12 per cent. more than exports, which proves that freight and commissions add 12 per cent. to the original value of merchandise when shipped. Freight averages £8 for every £100 worth of merchandise carried.

	Millions £.				Surplus Imports.	Surplus Exports.
	Imports.		Exports.			
	1861-70	1871-80.	1861-70.	1871-80.	20 Years.	20 Years.
United Kingdom	2,701	3,714	2,129	2,778	1,508	...
France	1,090	1,560	1,100	1,390	160	...
Germany	950	1,740	680	1,270	740	...
Russia	270	490	280	480	...	...
Austria	302	570	350	505	17	...
Italy	361	472	263	444	126	...
Spain and Portugal	222	253	164	242	69	...
Belgium	305	562	246	441	180	...
Holland	319	630	258	432	259	...
Scandinavia	169	348	151	262	104	...
Greece, Turkey, &c.	183	174	225	159	...	27
Europe	6,872	10,513	5,846	8,403	3,136	...
United States	493	988	361	1,122	...	2
Canada	161	179	132	151	57	...
Australia	289	402	191	343	157	...
India	293	368	518	597	...	454
China and Japan	244	289	233	271	29	...
South America	528	587	513	658	...	56
Egypt	73	52	184	136	...	195
Java	52	91	93	165	...	115
Other countries	223	318	230	311	...	...
Total	9,228	13,787	8,301	12,157	2,557	...

Digitized by Google

BALLAST.—In recent years the port entries of Europe show a declining ratio of vessels in ballast, although in the United Kingdom the ratio has risen.

Ports of	Tonnage of Ballast Entries.		Ratio to all Port Entries.	
	1865.	1880.	1865.	1880.
			Per cent.	Per cent.
United Kingdom . .	2,158,000	5,076,000	14	17
France	230,000	397,000	5	3
Germany	812,000	1,705,000	18	23
Russia	1,253,000	3,118,000	52	46
Austria	831,000	862,000	26	19
Italy	355,000	427,000	11	10
Spain	242,000	1,035,000	17	36
Belgium	21,000	110,000	2	3
Holland	212,000	71,000	10	2
Denmark	110,000	906,000	13	45
Sweden	1,104,000	1,797,000	69	60
Norway	993,000	852,000	70	45
Europe	8,321,000	16,356,000	21	20
United States . . .	...	3,140,000	...	21

BALLOONS.—The most remarkable ascents on record are—

Date.	Aeronaut.	Place of Ascent.	Height. Yards.	Distance. Miles.
1783	Montgolfier .	Lyons . . .	2,000	...
1804	Gay Lussac .	Paris . . .	7,700	...
1836	Holland . .	London . . .	...	500
1859	Wise . . .	New York . .	...	1,150
1862	Glaisher . .	Wolverton .	12,000	...

During the siege of Paris, September 1870 to February 1871, there were 64 balloons sent up, containing 91 passengers, 354 pigeons, and 3 million letters (weighing 9 tons). See *Aeronaut, Barometer, Sound.*

Digitized by Google

BANANA.—The most prolific of all fruits of the earth, being 44 times more productive than potatoes, and 131 times more than wheat.

BANKS.—Since 1840 the banking of the world has increased about eleven-fold, that is, three times as fast as commerce, or thirty times faster than population.

A.—CAPITAL ENGAGED IN BANKING.

	Millions £.			Amount per Inhabitant.
	Capital.	Deposits.	Total.	
United Kingdom	270	570	840	£25
France	55	150	205	6
Germany	85	200	285	6
Russia	45	110	155	2
Austria	36	130	166	5
Italy	31	60	91	3
Spain and Portugal	12	10	22	1
Belgium	7	20	27	5
Holland	6	20	26	7
Scandinavia	11	24	35	4
Europe	558	1,294	1,852	£6
United States	145	386	531	10
Canada	17	18	35	8
Australia	19	66	85	30
Totals	739	1,764	2,503	£7

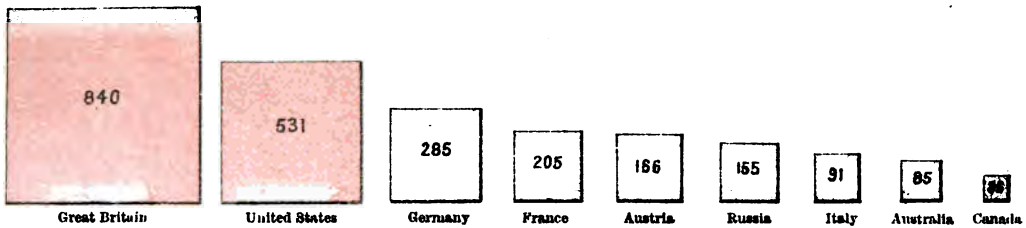
B.—RATES OF INTEREST SINCE 1850.

	1851–60.	1861–70.	1871–80.	Average of 30 years.
Great Britain	4·17	4·23	3·28	3·89
France	4·30	3·55	3·94	3·93
Germany	4·05	4·56	4·30	4·30
Austria	5·26	4·77	4·79	4·94
Italy	5·35	5·69	4·85	5·30
Holland	3·60	3·98	3·40	3·67
Belgium	3·62	3·59	3·60	3·60
Europe	4·27	4·30	3·71	4·09

Digitized by Google

BANKING.

Capital employed.



The numbers stand for millions £.

Banking ratio in national wealth.

The above signifies that Great Britain, for example, has nearly ten per cent. of her national wealth engaged in banking.

Digitized by Google

Digitized by Google

C.—Issue and Specie Reserve of all Banks in 1880.

	Millions £.		Ratio of Reserve.	Issue per Inhabitant.
	Issue.	Reserve.		
United Kingdom . .	43	33	77	£1 4 6
France	92	79	86	2 10 0
Germany	50	31	62	1 2 0
Russia	116	28	24	1 8 0
Austria	66	17	25	1 16 0
Italy	67	8	12	2 8 0
Spain	7	2	28	0 9 0
Switzerland . . .	4	2	50	1 10 0
Belgium	14	4	28	2 12 0
Holland	17	12	70	4 5 0
Sweden and Norway	7	2	28	1 2 0
Denmark	4	2	50	2 1 0
Greece	3	1	33	1 15 0
Europe	490	221	45	£1 12 0
United States . . .	149	68	46	2 15 0
Spanish America . .	70	10	14	3 6 0
India	12	12	100	0 1 3
Australia	12	12	100	4 5 0
Canada	8	2	25	1 16 0
Totals . .	741	325	44	£1 9 0

The Issues and Reserves of the principal banks were as follows:—

Bank.	Issue (Millions £).		Specie Reserve (Millions £).	
	1871-80.	1880.	1871-80.	1880.
England . . .	27	27	26	28
France . . .	94	92	67	79
Germany . . .	50	50	31	31
Russia	121	116	31	28
Austria	65	66	15	17
United States .	153	149	31	68
Totals . .	510	500	201	251

Digitized by Google

D.—Rates of Interest in 1882.

	Bank.	Open Market.		Bank.	Open Market.
London . . .	4·12	3·37	Berlin . . .	4·62	3·87
Paris . . .	3·75	3·37	Amsterdam .	4·50	4·25
Vienna . . .	4·12	3·75	Brussels . .	4·50	4·25
Hamburg . .	...	4·00	St. Petersburg	6·00	6·12

E.—The Three Great Banks.

	Bank of England.	Bank of France.	Bank of Germany.
Number of shares .	145,600	18,300	40,000
Capital	£14,500,000	£7,300,000	£6,000,000
Real value of shares	£51,200,000	£23,000,000	£9,000,000
Ordinary dividend .	10 per cent.	15 per cent.	6 per cent.

F.—Banks of England and France Compared.

Year.	Millions £.			
	Bank of England.		Bank of France.	
	Issue.	Reserve.	Issue.	Reserve.
1810	21·0	3·5	4·0	1·6
1830	20·1	9·2	8·9	5·8
1850	20·4	16·0	19·7	17·9
1870	24·5	22·3	57·6	49·8
1882	25·9	20·4	112·2	84·2

G.—Bank of France Discounts.

	Millions sterling.			
Year.	Paris.	Branches.	Total.	Ratio to Pop.
1839	42	23	65	£2
1847	53	53	106	3
1857	84	140	224	6
1866	103	158	261	7
1881	220	235	455	12

H.—Bank of Prussia.

	Amount of Turn-over (Thousands omitted).		Amount of Turn-over (Thousands omitted).
1820 . . .	£11,400	1850 . . .	£77,100
1830 . . .	35,500	1860 . . .	208,000
1840 . . .	45,200	1870 . . .	330,000

It has now become the Imperial Bank of Germany.

Digitized by Google

The German banks in December 1880 showed as follows (thousands omitted):—

	Imperial.	Various.	Total.
Capital . .	£6,000	£7,500	£13,500
Issue . . .	41,000	10,000	51,000
Reserve . .	29,500	6,000	35,500
Deposits . .	9,000	3,500	12,500
Discounts . .	24,500	14,000	38,500

Besides the above, the Mortgage Banks had a capital of 18, and an issue of 80 millions sterling.

I.—Growth of the Bank of England.

The capital of the Bank has risen as follows:—

1694 . .	£1,200,000	1782 . .	£11,600,000
1708 . .	4,400,000	1816 . .	14,500,000
1746 . .	10,800,000	1882 . .	14,500,000

Year.	Millions £.			
	Circulation.	Deposits.	Securities.	Bullion.
1780	8·4	4·7	10·9	3·6
1790	10·0	6·2	10·3	8·6
1800	16·8	7·1	21·4	6·1
1810	21·0	12·5	35·4	3·5
1820	23·5	4·1	26·2	4·9
1830	20·1	10·8	24·2	9·2
1840	16·5	6·6	21·6	4·3
1850	20·4	18·4	26·0	16·0
1860	21·5	18·8	29·4	14·0
1870	24·5	24·2	29·5	22·3
1880	27·1	33·1	34·8	27·9
1882	25·7	28·8	37·1	20·4

K.—Banking in Scotland.

Year.	Millions £.			Per Inhabitant.
	Capital.	Deposits.	Total.	
1845	11	33	44	£15
1855	12	43	55	18
1865	9	56	65	20
1875	10	78	88	25
1881	9	78	87	24

Digitized by Google

The issue rose from £3,100,000 or 22 shillings per head in 1845, to £5,600,000 or 30 shillings per head in 1882.

L.—Joint-Stock Banks in United Kingdom.

In June 1882 there were 186 banking companies, of which 120 were English, 10 Scotch, 9 Irish, and 47 Colonial, whose business stood as follows:—

	Millions £.				
	English.	Scotch.	Irish.	Colonial.	Total.
Capital	52	9	7	40	108
Reserve	22	6	3	15	46
Value of stock	138	24	20	68	250
Issue	28	6	7	10	51
Deposits	279	79	23	132	513
Cash	82	14	6	33	135
Government securities	52	12	2	12	78
Discounts	225	62	20	251	558
Assets	398	105	32	250	785

It appears from the foregoing that although the nominal capital and reserve employed in banking do not exceed 154 millions, the shares represent an actual value of 250 millions; the above does not include private banks.

M.—Increase of Banking in United Kingdom.

	Millions £. Capital and Deposits.		Amount per Inhabitant.	
	1850.	1882.	1850.	1882.
England	207	660	£11	£26
Scotland	36	103	12	28
Ireland	17	43	3	8
United Kingdom	260	806	£10	£23

The banks of the United Kingdom are owned by 88,000 shareholders, the average capital to each shareholder being £1000 in Scotland, £780 in England, and £720 in Ireland.

Digitized by Google

The number of banking offices in the United Kingdom is as follows:—

	No.	Per 100,000 Inhabitants.
England . .	2,117	8
Scotland . .	893	25
Ireland . .	495	9
United Kingdom	3,505	10

N.—Bank-note Issue of United Kingdom.

	Thousands Omitted.			Per Inhabitant (Shillings).		
	1844.	1874.	1882.	1844.	1874.	1882.
England . . .	£28,400	£31,200	£28,900	34	25	22
Scotland . . .	3,000	5,900	5,600	22	35	30
Ireland . . .	5,900	6,800	7,300	15	26	29
United Kingdom .	£37,300	£43,900	£41,800	27	27	23

O.—Colonial Banking.

	Australia.				Canada, 1882.	
	Amount (Thousands Omitted).		Per Inhabitant.		Amount (Thousands Omitted).	Per Inhabitant.
	1872.	1882.	1872.	1882.		
Paid Capital	£9,300	£17,400	£4	£6	£17,700	£4
Discounts .	31,500	74,600	15	25	30,100	7
Liabilities .	33,500	71,400	16	24	31,000	8
Assets . .	42,800	93,000	20	34	48,100	11

P.—Australian Banks in 1881.

	Thousands Omitted.				Ratio per Inhab.	
	Deposits.	Discounts.	Assets.	Liabilities.	Deposits.	Discounts.
Victoria. .	£20,360	£18,195	£23,908	£22,040	£23	£21
N. S. Wales	18,770	17,210	25,390	20,405	25	23
N. Zealand.	9,290	11,480	14,060	10,330	17	21
S. Australia	4,540	5,510	7,215	5,190	16	20
Queensland	3,408	3,970	5,520	4,115	13	16
Tasmania .	2,252	1,620	2,290	2,380	19	14
W. Australia	330	405	610	390	11	13
Total . .	£58,950	£58,390	£78,993	£64,850	21	21

Digitized by Google

Q.—Canadian Banks in 1881.

	Thousands Omitted.			Ratio per Inhabitant.	
	Capital.	Assets.	Liabilities.	Capital.	Assets.
Quebec . . .	£12,400	£25,100	£15,800	£9	£18
Ontario . . .	3,600	15,000	10,800	2	8
Nova-Scotia. .	1,200	3,100	1,900	3	7
New Brunswick	600	1,100	600	2	3
Total . .	£17,800	£44,300	£29,100	£4	£10

R.—Banks in United States.

Period.	No. of Banks.	Paid Capital (Millions £).	Issue (Millions £).
1830–39	835	53	21
1840–49	760	43	22
1850–60	1,475	79	40
1861–78	3,100	101	70
1879–80	6,360	131	70
1882	6,813	145	71

There are 2132 National Banks and 4681 State or private banks. Deposits and capital, 531 millions sterling, or £10 per inhabitant, against £23 in the United Kingdom. The distribution of banks in December 1880 was as follows:—

States.	No. of Banks.	Capital and Deposits (Millions £).	Amount per Inhabitant.
New England . . .	1,080	144	£36
Middle	1,920	244	21
Southern	670	31	2
Western	2,690	112	6
The Union . . .	6,360	531	£10

The shares of the National Banks are held by 208,000 persons, showing an average banking capital of £700 per shareholder, against £800 in Great Britain. Of 7 million shares only 26,000 are held in Europe, of which 7000 in Great Britain.

Digitized by Google

The statement of the National Banks for October 1881 compares with that of 8 years before, as follows, in millions £ sterling :—

	October 1873.	October 1881.	Difference.
Capital . .	90	97	+ 8 per cent.
Reserve . .	32	38	+ 18 „
Issue . .	62	67	+ 8 „
Deposits . .	118	225	+ 90 „
Discounts .	174	244	+ 40 „

The figures for 1873 represent the effective value in gold at the exchange of $88 per $100 greenback.

The total of banking capital and deposits compares with public wealth as follows:—

States.	Millions £.		Per Inhabitant.	
	Bank Capital, &c.	Wealth.	Bank Capital, &c.	Wealth.
New England	144	990	£36	£248
Middle . . .	244	3,280	21	283
Southern . .	31	884	2	58
Western . .	112	3,182	6	170
The Union .	531	8,336	£10	£160

S.—Banking and Commerce.

	Millions, £.		Banking Ratio to Commerce.
	Bank Capital and Deposits.	Net Imports and Exports.	
United Kingdom . .	840	570	144
France	205	332	61
Germany	285	315	90
Russia	155	151	102
Austria	166	128	130
Italy	91	96	95
Spain and Portugal . .	22	54	40
Belgium	27	116	23
Holland	26	121	22
Scandinavia	35	55	63
Europe	1,852	1,938	105
United States . . .	531	309	170
Canada	35	35	100
Australia	85	101	84
The World . . .	2,503	2,383	105

Digitized by Google

BANKRUPTCY.

A.—Average for Years 1879–81.

	No. of Failures.	Amount.	Ratio to Commerce.
			Per cent.
United Kingdom . . .	13,720	£31,300,000	5½
France	5,580	10,200,000	3
Austria	1,414	1,820,000	1½
United States	5,715	16,300,000	5½
Canada	920	2,730,000	8

The number and amount in most countries show a declining ratio compared with trade, perhaps owing to greater caution among merchants.

B.—Failures in United Kingdom: Number.

Wholesale.	1880.	1882.
London . . .	385	399
Liverpool . . .	39	48
Manchester . .	102	52
Other towns . .	831	722
Scotland . . .	99	78
Ireland . . .	22	14
Wholesale . .	1,478	1,313
Retail . . .	11,669	9,703
Total . .	13,147	11,016

Among retail failures since 1879 farmers constituted a little over 10 per cent. in number.

C.—Assets in Bankruptcy, England and Wales.

Assets.	Number.		Percentage.	
	1870.	1881.	1870.	1881.
Under 5 per cent.	123	963	7	25
5 to 25 „	833	2,256	44	58
25 to 40 „	316	349	17	9
Over 40 „	616	322	32	8
Total . .	1,888	3,890	100	100

Digitized by Google

D.—Bankruptcy Report, England, 1870–80.

	No. of Cases.	Amount.	Assets.	Ratio of Assets.
1870	5,002	£17,400,000	£5,300,000	30 per cent.
1880	10,298	16,200,000	4,600,000	28 „
Average 10 years	9,515	20,300,000	6,200,000	31 „

The cases liquidated in Court showed that law costs absorbed 40 per cent. of assets.

E.—Ireland, 1876–80.

The aggregate of Court business in the five years was as follows:—

Liabilities .	£2,750,000	Law costs .	£245,000
Assets . .	805,000	To creditors .	560,000

The average dividend, therefore, was 20 per cent.

F.—France, 1840–81.

	Annual Average.	
Years.	No. of Failures.	Ratio of Assets.
1840–50	3,480	31 per cent.
1860–70	5,120	21 „
1878–81	5,580	17 „

The decline of assets is ascribed to a great increase of fraudulent trading.

The following table shows the number of failures compared with that of merchants and traders:—

Year.	No. of Merchants.	Failed.	Ratio to Merchants.	Failures over £2000.
1844	1,414,000	3,011	2·1 per cent.	52 per cent.
1854	1,420,000	3,691	2·6 „	48 „
1864	1,410,000	4,642	3·3 „	43 „
1874	1,606,000	5,508	3·4 „	54 „

Not only has the ratio of failures risen, but also the average amount per failure.

G.—United States, 1866–82, Average.

Years.	Number.	Amount.	Average.
1866–72	2,889	£17,100,000	£6,000
1873–80	6,560	32,200,000	4,900
1882	7,574	19,400,000	2,600

Digitized by Google

H.—CANADA, 1879–82.

Years.	Number.	Amount.	Average.
1879–80	1,060	£3,080,000	£3,000
1881–82	625	1,450,000	2,300

In the 18th century the number of bankruptcies in England averaged 177 yearly down to 1750, and 460 in the 50 years following.

The most remarkable failures since 1760 are described under the title of *Crisis*.

BARLEY.—The principal features of this crop are:—

	Acres (Thousands Omitted).	Crop, Million Bushels.	Bushels per Inhabitant.	Bushels per Acre.
United Kingdom . .	2,590	90	2½	34
France	3,500	80	2	23
Germany	3,900	90	2	23
Russia	15,500	130	1½	8
Austria	5,100	81	2	16
Italy and Spain . .	4,700	95	2	18
Belgium and Holland	230	8	1	35
Scandinavia	1,300	39	4	30
Roumania, &c. . . .	2,000	40	5	20
Europe	38,820	653	2	17
United States . . .	1,700	40	1	24
Japan	2,000	50	1½	25
Egypt	1,000	15	3	15
Algeria	2,000	45	14	22
British Colonies . .	940	34	5	36
Totals . .	46,460	837	2	18

In the United Kingdom we consume 2 bushels per inhabitant in the form of beer. See *Malt*.

BAROMETER.—In London it ranges between 28·700 and 30·700, but it has exceeded the latter figure three times on record—

In 1778	30·935
February 11, 1849 . . .	30·695
January 18, 1882 . . .	30·983

Mr. Glaisher's barometer in his various balloon ascents marked as follows:—

Miles High.	Inches.	Miles High.	Inches.
1	24·7	4	13·7
2	20·3	5	11·3
3	16·7		

He therefore estimates for 10 miles 4·2, and for 15 miles 1·6 inches. See *Meteorology*.

Digitized by Google

The mean height of barometer varies according to latitude as follows :—

Degree of Latitude.	Barometer.	Degree of Latitude.	Barometer.
10	29·98	45	30·00
20	30·06	50	29·81
30	30·11	60	29·80
40	30·02	67	29·67

It varies according to elevation as follows :—

	Feet above Sea.	Mean Barometer.		Feet above Sea.	Mean Barometer.
Sea-level	0	30·00	Madrid	1,995	27·72
Rome	151	29·76	St. Rémy	5,265	24·45
Milan	420	29·45	St. Gothard.	6,808	23 07
Moscow	984	28·82	Mexico	7,471	22·52
Geneva	1,221	28·54	Bogota	8,731	21·42
Munich	1,765	27·95	Quito.	9,541	20·75

BARRACKS.—The death-rate in Indian barracks before the adoption of Dr. Farr's reforms, in 1860, averaged yearly 68 per 1000; in recent years it has fallen to 9 per 1000, the difference being equivalent to a saving of 6 per cent., or 4200 soldiers per annum. The proper allowance of air in barracks is 600 cubic feet per man in Europe, and 1000 in India. Horses in England require 1600 cubic feet each.

The report to Parliament in 1861 showed that there were 243 barracks in the United Kingdom holding 76,000 men, but with accommodation for no more than 54,000 at the rate of 600 cubic feet of air per man. The average ranged from 290 to 550 cubic feet. The new barracks at Chelsea are regarded as a model, and cost £296,000, or £245 per man, including the cost of site.

BARRAGES.—There are numerous works of this kind on the Seine, Thames, Nile, and other rivers, besides those made by the French in Algeria. At St. Denis du Sig, at the foot of Mount Atlas, there is a "barrage" 50 feet high, built by the French Government at a cost of £20,000. Near it is the Habra, constructed by a French company at a cost of £160,000, for the irrigation of a farm of 100 square miles; the principal breakwater is 130 feet high, 120 thick, and 1500 feet long, containing 14 million tons of water, yet the sluice can be opened by one man. See *Irrigation.*

BARRENNESS.—One woman in 20, one man in 30, that is, about 4 per cent. of the population. It is found that one marriage in 20 is barren, say 5 per cent. Among the nobility of Great Britain 21 per cent. have no children,

Digitized by Google

owing to intermarriage of cousins, no less than 4½ per cent. of the present nobility being married to cousins. See *Marriage.*

BASTARDY.—See *Births, Illegitimacy.*

BATHS.—The use of baths among the working classes in London is shown by the receipts at various dates, as follows:—

1850 . . .	£9,800
1860 . . .	25,000
1880 . . .	41,000

The baths in Germany are visited annually by upwards of 150,000 foreigners. See *Mineral Waters.*

BATTLES.—The numbers placed *hors-de-combat* are not relatively so large as formerly.

	Men Engaged.	Hors-de-combat.	Ratio.
Thrasymene . .	65,000	17,000	27 per cent.
Cannæ	146,000	52,000	34 „
Bannockburn . .	135,000	38,000	28 „
Agincourt . . .	62,000	11,400	18 „
Cressy	117,000	31,200	27 „
Marengo . . .	58,000	13,000	22 „
Austerlitz . . .	170,000	23,000	13 „
Borodino . . .	250,000	78,000	31 „
Waterloo . . .	145,000	51,000	35 „
Alma	103,000	8,400	8 „
Sadowa	402,000	33,000	8 „
Gravelotte . . .	320,000	48,500	15 „

BEEF.—See *Meat.*

BEER.—The following table shows the production:—

	No. of Breweries.	Million Gallons.	Gallons per Inhabitant.
United Kingdom . .	16,114	1,025	29·0
France	3,100	190	5·2
Germany	23,940	880	19·4
Russia	460	63	0·7
Austria	2,297	245	6·4
Italy	200	20	0·7
Switzerland	400	16	5·6
Belgium	2,500	170	31·5
Holland	560	35	8·8
Denmark	240	25	13·0
Sweden and Norway .	640	35	5·8
Europe	50,451	2,704	9·2
United States . . .	3,293	340	6·6
Total . .	53,744	3,044	9·0

Digitized by Google

The strength varies as follows :—

	Alcohol.	Malt per Barrel.
Burton ale	8·2	4·5
Bass's „	8·4	4·2
Edinburgh ale . . .	4·4	1·8
Guinness's „ . . .	6·8	2·9
London porter . . .	4·1	1·9
„ beer	3·9	1·7
Lager „	3·2	1·5

The consumption in the United Kingdom in 1881 was as follows :—

	Million Gallons.	Gallons per Inhabitant.
England	905	34·8
Scotland	39	10·5
Ireland	63	12·1
United Kingdom .	1,007	28·6

In 1882 one firm brewed 44 million gallons, 570 over 400,000 gallons each, and the rest under 400,000 gallons; duty 2·08d. per gallon, or £8,700,000 on the amount brewed. Exported, 16 million gallons.

The consumption in France has risen as follows :—

Year.	Million Gallons.	Per Inhabitant.	Year.	Million Gallons.	Per Inhabitant.
1830	66	2·0	1860	143	4·0
1840	95	2·8	1870	154	4·0
1850	110	3·1	1880	190	5·1

The annual consumption in England and Wales has been :—

Period.	Million Gallons.	Per Inhabitant.	Period.	Million Gallons.	Per Inhabitant.
1660–1700	255	44	1801–1830	335	30
1701–1750	215	35	1831–1860	560	33
1751–1800	252	32	1861–1880	835	36

The price per gallon during 680 years has ruled thus :—

Period.	Pence.	Period.	Pence.
1201–1300 . . .	3	1701–1800 . . .	11
1301–1600 . . .	5	1801–1880 . . .	17
1601–1700 . . .	6	1882 . . .	20

The above are according to weight of silver, but the nominal price was, for example, in the 13th century one penny. See *Drink, Liquor.*

BEES.—A hive of 5000 bees produces about 50 lbs. of honey yearly, and multiplies tenfold in 5 years. The ordinary value of a hive in Europe is £1 sterling. Bees eat 20 lbs. honey in making a pound of wax.

Digitized by Google

	Hives.	Million lbs. Honey.
France . . .	950,000	23
Germany . .	1,454,000	40
Russia . . .	110,000	2
Austria . . .	1,550,000	40
Belgium . . .	200,000	5
Holland . . .	240,000	6
Denmark . .	90,000	2
Greece . . .	30,000	3
United States . .	2,800,000	62
Total . .	7,424,000	183

The largest bee-owner in the world is Mr. Harbison of California, who has 6000 hives, producing 200,000 lbs. honey yearly, worth £8000. There are in the United States 70,000 bee-growers, but the average which they get from their hives is only 22 lbs., whereas the average in England is 50 lbs., and some hives have given as high as 120 lbs.

BEET-ROOT.—The production in 1882 was as follows:—

	Beet-root, Million tons.	Beet sugar, Thousand tons.
France . . .	9	390
Germany . . .	12	606
Russia . . .	4	240
Austria . . .	8	460
Holland, &c. . .	2	115
Total . . .	35	1,811

The crop ranges from 5 tons of roots per acre in Russia, to 9 tons in Germany. In England it has given 12 tons per acre, equivalent for cattle-food to 4 tons of hay, and worth 16 shillings per ton, but it has been found too costly in cultivation. Experimental growing in Canada has proved most successful. It takes about 14 tons of roots in Europe generally per ton of beet sugar, the average of saccharine matter being 7 per cent. as compared with 4 per cent. twenty years ago.

BELLS.—The largest are the following:—

	Tons.		Tons.		Tons.
Moscow . .	202	Rouen . . .	18	Montreal . .	12
Burmah . .	117	Olmutz . . .	18	Cologne . .	11
Pekin . . .	53	Vienna . . .	18	Oxford . . .	8
Novgorod . .	31	St. Paul's . .	16	St. Peter's .	8
Notre Dame .	18	Westminster .	14		

Bell-metal should have 77 parts copper, and 23 tin.

BENEFICES.—See *Church*.

Digitized by Google

BEQUESTS.—The annual average of sums left in charity in Great Britain, France, and Italy, compared with the amount of proved assets, shows thus :—

	Bequests.	Per £1000 of Assets.	Per Death of Population.
United Kingdom .	£650,000	£4	19 shillings
France . . .	1,190,000	6	27 „
Italy . . .	124,000	2	8 „

The income of endowed charities in England has risen from £1,520,000 in 1840 to £2,550,000 in 1881. The number of testators in France leaving charities averages 4200 per annum, and the amount left by each £290. See *Charities, Hospitals.*

BIBLE.—No fewer than 1326 editions of the Bible were published in the 16th century. In the 17th and 18th centuries it was translated and published in many languages by the polyglot press of Propaganda Fide at Rome. In the 19th century the English and American societies have printed, in the Protestant version, 124 million copies of the Bible or of the New Testament, viz. :—British, 74 million ; American, 32 million ; other societies, 15 million copies.

BICYCLE.—The fastest trips on record are :—Tunbridge to Liverpool, 234 miles, 18½ hours ; London to John o' Groat's, 800 miles, 14 days. A tricycle has run 10 miles in 42 minutes.

In 1882 there were 9800 bicycle riders in London, and 96,000 in England and Wales. The maxima of speed obtained up to the present has been :—

Miles.	Hours.	Minutes.	Miles.	Hours.	Minutes.
10	0	34	50	3	10
20	1	12	80	5	47
40	2	32	100	7	34

BILLS OF EXCHANGE.—The current amount in Great Britain has been :—

Year.	Millions £.	Ratio to Commerce.	Year.	Millions £.	Ratio to Commerce.
1830	96	100	1860	300	93
1840	125	102	1870	400	85
1850	175	105	1880	500	90

The discounts are estimated as follows :—

	Millions £.
English banks . . .	235
Scotch banks . . .	65
Irish and Colonial banks .	55
Private discounters . .	145
	500

Digitized by Google

The discounts in the United States in 1879 comprised 3,200,000 bills for 700 millions sterling, say £220 each. In France the average is £43 per bill. See *Banks.*

BILLS OF SALE.—The average number in England and Wales during the years 1879–81 was 52,900.

BIRDS, FLIGHT OF.

	Miles per Hour.		Miles per Hour.
Hawk	150	Rook	60
Eider-duck	90	Pigeon	40

See *Carrier-Pigeons.*

BIRD'S-NESTS, for soup, in China. There are 9 million imported yearly into Canton, value 10 shillings per ounce, about 50 weighing 1 lb.

BIRTHS.

A.—Numbers in All Countries.

	Daily.	One Year.	Excess over Deaths.
England	2,441	880,520	352,460
Scotland	342	124,652	48,850
Ireland	353	128,010	25,055
United Kingdom	3,136	1,133,182	426,365
France	2,561	936,000	97,000
Germany	4,750	1,736,000	592,000
Russia	8,525	3,116,000	779,000
Austria	2,328	1,486,000	324,000
Italy	2,910	1,064,000	228,000
Spain	1,620	592,000	115,000
Portugal	407	150,000	30,000
Holland	391	144,000	49,000
Belgium	471	172,000	48,600
Denmark	171	62,500	24,000
Sweden	380	139,000	62,000
Norway	158	58,000	29,000
Switzerland	236	86,000	20,500
Greece	195	72,000	17,000
Roumania	495	180,000	40,000
Europe	30,734	11,126,682	2,881,465
United States	5,750	2,100,000	950,000
Canada	384	140,000	60,000
Australia	301	109,000	66,000
Total	37,169	13,475,682	3,957,465

Digitized by Google

B.—Birth-rate per 1000 Inhabitants.

	1861-70.	1871-80.	1861-80.
United Kingdom . .	33·4	34·3	33·8
France	26·5	25·6	26·1
Germany . . .	39·8	39·8	39·8
Austria	39·9	39·9	39·9
Hungary . . .	42·2	43·0	42·6
Holland . . .	34·6	36·2	35·4
Belgium . . .	31·2	32·2	31·7
Denmark . . .	31·2	31·2	31·2
Sweden	32·1	30·3	31·2
Italy	37·5	36·9	37·2
Spain	37·2	37·2	37·2
Australia . . .	39·0	36·0	37·5

In the above table, where both decades have the same rate, it indicates want of returns before 1870.

C.—Births according to Months (100 par).

	France.	Germany.	Spain.	Italy.
January . . .	105	103	114	107
February . . .	111	105	108	114
March	109	103	112	110
April	106	100	102	106
May	99	97	100	95
June	95	95	89	89
July	96	96	88	91
August	96	98	91	93
September . .	97	106	98	100
October . . .	95	100	100	98
November . . .	97	100	97	98
December . . .	95	99	100	97

Percentage of Births according to Seasons.

Quarter Ending	England.	France.	Germany.	Sweden.	Italy.	St. Petersburg.
March . .	26·2	27·0	25·9	26·8	27·5	25·6
June . .	26·0	24·9	24·2	23·8	24·1	26·0
September .	24·0	24·0	25·0	23·7	23·7	24·7
December .	23·8	24·1	24·9	25·7	24·7	23·7
Total .	100·0	100·0	100·0	100·0	100·0	100·0

Digitized by Google

D.—Births to Each Marriage.

	1861–70.	1871–80.	Difference.
England . . .	3·98	4·16	+ 0·18
Scotland . . .	4·51	4·43	− 0·08
Ireland . . .	4·95	5·46	+ 0·51
United Kingdom .	4·18	4·33	+ 0·15
France . . .	3·09	2·98	− 0·11
Belgium . . .	3.95	4·21	+ 0·26
Holland . . .	4·09	4·34	+ 0·25
Denmark . . .	3·64	3·55	− 0·09
Sweden . . .	4·27	4·01	− 0·26

The greatest increase of fertility is in Ireland, the greatest decline in Sweden.

E.—Twins and Triplets.

	Per Thousand Births.			Per Thousand Births.	
	Twins.	Triplets.		Twins.	Triplets.
England .	11·2	...	Switzerland .	12·0	...
Scotland .	11·7	...	Spain .	8·4	...
Ireland .	17·6	...	Belgium .	9·1	0·10
France .	10·1	0·12	Holland .	12·8	...
Germany .	12·9	0·13	Denmark .	13·7	0·24
Russia .	12·1	...	Sweden .	13·6	0·18
Austria .	13·4	0·18	Norway .	11·8	0·15
Italy .	11·8	0·14	Iceland .	14·2	0·33

Twins give 108 males to 100 females, and triplets show a medium result for France, Germany, and Austria, as follows:—

Birth of 3 boys	26·0
„ 3 girls	22·7
Two boys and a girl . . .	27·0
Two girls and a boy . . .	24·3
	100·0

This gives 156 boys and 144 girls, that is, precisely the same ratio as in the case of twins.

F.—Declining Ratio of French Births.

Period.	Per Marriage.	Period.	Per Marriage.
1800–30	3·82	1861–70	3·09
1831–60	3·20	1871–80	2·98

Digitized by Google

G.—Ratio of Sexes, Bastardy, &c.

	Per 1000 Births.			
	Male.	Female.	Illegitimate.	Still-born.
England . . .	511	489	45	...
Scotland . . .	514	486	89	...
Ireland. . . .	515	485	23	...
United Kingdom	512	488	47	...
France	513	487	76	46
Germany . . .	514	486	84	41
Russia	508	492	31	...
Austria. . . .	516	484	129	25
Italy	517	483	68	31
Spain	516	484	55	...
Portugal . . .	515	485	56	...
Holland . . .	513	487	35	43
Belgium . . .	514	486	70	45
Denmark . . .	513	487	112	30
Sweden . . .	512	488	102	29
Norway . . .	514	486	85	35
Switzerland . .	512	488	46	44
Greece	519	481	16	...
Roumania. . .	521	479	...	...
Europe	513	487	52	...

The ratio of illegitimacy is falling in England; rising in France and Sweden.

H.—Birth-rate in Cities, per 1000 Inhabitants.

Alexandria . .	45·0	Edinburgh. .	32·2	Norwich . . .	33·6
Amsterdam . .	36·7	Geneva . . .	24·3	Nottingham .	36·7
Barcelona . .	29·2	Glasgow . .	37·4	Oldham . . .	35·4
Berlin. . . .	37·5	Hague . . .	39·7	Paris	30·5
Birmingham .	37·6	Hamburg . .	37·5	Philadelphia .	36·0
Bombay . . .	25·6	Havanna . .	25·4	Plymouth . .	32·7
Boston . . .	30·0	Hull	36·4	Portsmouth . .	34·4
Bradford. . .	33·1	Leeds . . .	36·8	Rio Janeiro . .	35·5
Breslau . . .	37·7	Leicester . .	38·4	Rome	27·2
Brighton . . .	30·6	Liverpool . .	37·6	Rotterdam . .	38·8
Bristol . . .	34·5	London . . .	34·7	St. Louis. . .	30·0
Brussels . . .	34·7	Lyons . . .	26·0	St. Petersburg .	37·8
Bucharest . .	29·5	Madras . . .	39·0	Sheffield . . .	38·0
Buda-Pesth . .	35·8	Madrid . . .	37·5	Stockholm . .	33·0
Buenos Ayres .	31·7	Manchester .	36·9	Sunderland . .	39·3
Christiania . .	34·5	Munich . . .	39·5	Turin . . .	31·5
Copenhagen . .	39·1	Naples . . .	32·0	Venice . . .	30·2
Dresden . . .	35·4	Newcastle . .	36·8	Vienna . . .	39·2
Dublin	29·1	New York . .	39·4	Wolverhampton	35·9

Digitized by Google

I.—Births in United Kingdom, 1861–80.

	Number, Thousands.			Rate per 1000 Inhabitants.		
	1861–70.	1871–80.	1861–80.	1861–70.	1871–80.	1861–80.
England . . .	7,500	8,588	16,088	35·70	35·80	35·75
Scotland . . .	1,121	1,233	2,354	35·70	35·20	35·45
Ireland . . .	1,468	1,402	2,870	26·10	26·50	26·30
United Kingdom .	10,089	11,223	21,312	33·40	34·30	33·85

Families living in the country have 8 per cent. more children than those in towns. Old families have a marked tendency to die out in England, Italy, and Prussia, probably because of intermarriage with cousins. Among Jews there are 116 males born for 100 females: their ratio of illegitimacy is the lowest in the world, barely 2 per cent. After a destructive war the births of males predominate in a surprising manner.

BISHOPS

A.—Roman Catholic Bishops.

	Archbishops.	Bishops.	Total.
United Kingdom . .	7	42	49
France	17	69	86
Germany	5	23	28
Russia	2	13	15
Austria	19	51	70
Italy	50	218	268
Spain	9	45	54
Portugal	3	15	18
Belgium and Holland .	2	10	12
Switzerland . . .	...	6	6
Greece	3	6	9
Turkey	3	12	15
Europe . . .	120	510	630
United States . .	12	52	64
Spanish America . .	16	79	95
British America . .	5	25	30
Australia	2	16	18
India	2	22	24
Armenia, Persia, &c. .	27	47	74
Various missions . .	...	328	328
Total . .	184	1,079	1,263

Digitized by Google

B.—Protestant Bishops of British Empire.

	Archbishops.	Bishops.	Total.
England	2	30	32
Scotland	...	7	7
Ireland	2	10	12
Colonies	...	73	73
Total	4	120	124

The income of English bishops ranges from £3000 upwards, the Archbishop of Canterbury having £15,000 a year. See *Churches.*

BISON.—Between 1860 and 1882 more than 15 millions were killed in the United States.

BLACKING.—For boots. The consumption in England in 1880 amounted to a value of £560,000.

BLASTING.—The South-Eastern Railway Company, at Dover, removed at one blast 400,000 cubic yards of the cliff with 8 tons of powder in 3 charges. Nitro-glycerine is now used, having 5½ times the force of powder. See *Explosives.*

BLIND.

	Number.	Per 100,000 Inhabitants.
England	24,720	95
Scotland	3,240	91
Ireland	5,936	111
United Kingdom	33,896	97
France	28,491	74
Germany	26,170	58
Austria	32,336	85
Switzerland	2,640	95
Italy	28,100	99
Spain	35,290	216
Belgium	4,182	76
Holland	2,410	61
Sweden	4,120	91
Norway	3,730	208
Denmark	2,450	126
Europe	203,815	91
United States	20,430	40
Total	224,245	81

The probable causes in those countries with a high ratio are—in Norway snow, in Ireland smoky hovels, in Spain dusty plains and want of trees. The ordinary ratio of sex is 11 blind males to 9 females. The French returns show

Digitized by Google

18 per cent. born blind, and 82 per cent. the result of accident or sickness.

BLOOD.

A.—Elements of Human Blood.

	Man.	Woman.
Water	77·8	79·6
Albumen	6·2	6·4
Colour	14·1	12·2
Saline, &c.	1·9	1·8
	100·0	100·0

B.—Temperature, Fahrenheit.

Glowworm	74	Elephant	99½	Monkey	104½
Snail	76	Porpoise	100	Sheep	104½
Shark	77	Bat	100	Hog	105
Oyster	82	Rat	102	Jackdaw	107
Serpent	88½	Cat	102	Sparrow	108
Man	98½	Ox	102	Pigeon	109½
Horse	99½	Elk	103	Chicken	111

C.—Iron in Blood.

	Grammes per Ton.	Oz. per Cwt.		Grammes per Ton.	Oz. per Cwt.
Man	510	0·91	Pig	590	1·06
Ox	560	1·00	Frog	420	0·75

BODY, GROWTH OF.—Danson's tables of male prisoners in English gaols in 1858 and 1878 give the following:—

	Height, inches.		Weight, lbs.	
Age.	1858.	1878.	1858.	1878.
18	64·3	64·1	122	125
20	65·2	65·1	133	137
22	66·2	65·7	139	142
24	65·9	65·4	142	141
26	66·2	65·6	142	143
28	66·7	65·7	143	144
30	66·4	65·5	142	144

See *Anthropometry.*

BOOKS.—About 100 new works are published daily, or 30,000 per annum, without counting new editions of old works.

A.—Annual Average of New Books.

	1828-32.	1866-69.	1878-80.
Great Britain	1,060	3,220	5,771
France	4,640	7,350	7,000
Germany	5,530	9,095	14,560
United States	1,013	2,165	2,500
Total	12,243	21,830	29,831

Digitized by Google

The annual book-fair at Leipzig disposes of 8000 tons of books, valued at £1,600,000.

The average edition of a book being 1000 copies, it appears that the above four countries print 30 million volumes yearly.

B.—Books in the United Kingdom, Issued in 1880.

Theology	708	Travels	211
Classics	507	Economy	204
Fiction	380	Medicine	148
Arts	362	Poetry	132
History	286	Sundry	1,355

In 1870 Great Britain exported books to the value of £631,000, and in 1880 of £970,000.

BOOTS.—The American machine enables a man to make 300 pairs of boots daily, a single factory in Massachusetts turning out as many pairs yearly as 32,000 bootmakers in Paris. The advance of these machines has been as follows:—

Year.	No. of Machines.	Million Pairs Boots Yearly.
1862	15	½
1865	470	15
1870	1,220	45
1875	2,300	100
1880	3,100	150

The Austrian Government makes 2 million pairs yearly. These machines are now in general use. The number of bootmakers in Great Britain is rapidly declining; in 1861 one for 103 inhabitants, and in 1871 for 126 inhabitants.

BORING.—See *Diamond-drill.*

BOUNTIES.—Between the years 1690 and 1830 Great Britain paid the inhabitants of Belfast and Dundee 28 millions sterling to enable them to sell and export Irish and Scotch linen at less than cost. The export of linen has quadrupled since the bounties were abolished in 1830, the average bounty before that year having been £150,000 per annum. Bounties on the exportation of grain, in England, averaged £160,000 per annum for some years, until their abolition in 1805. Sugar bounties prevail on the Continent, the annual average being £600,000 in France, £170,000 in Belgium, and £150,000 in Holland. The new shipping bounties in France (1880) are as follows:—48 shillings per ton for building iron vessels, and 16 shillings for wooden;

Digitized by Google

15 pence per ton per 1000 miles run, on French-built vessels entering French ports; 7½ pence per ton for French vessels not built in France. The amount paid in 1881 for these shipping bounties was £400,000: the increase of French tonnage entries in French ports 20,000 tons, say £20,000 earned for freight, or one-twentieth of the bounties.

BRAIN.—The latest classification of races, according to Bastian and other experts, shows weight of brain as follow:—

	Grammes.	Oz.		Grammes.	Oz.
Scotch	1,400	50·0	Pawnees	1,310	47·1
Germans	1,389	49·6	Italians	1,303	46·9
English	1,386	49·5	Hindoo	1,253	45·1
French	1,333	47·9	Gypsy	1,245	44·8
Zulus	1,320	47·5	Bushmen	1,240	44·6
Chinese	1,312	47·2	Esquimaux	1,219	43·9

Compared with size of body, the brain of the Esquimaux is as heavy as the Scotchman's.

The measurement of that part of the skull which holds the brain is stated in cubic inches thus:—

Anglo-Saxon	105	Ancient Egyptian	93
German	105	Hottentot	58
Negro	96	Australian native	58

In all races the male brain is about 10 per cent. heavier than the female. The highest class of apes has only 16 oz. of brain.

After the age of 50 the brain loses an ounce every 10 years. Cuvier's weighed 64, Byron's 79, and Cromwell's 90 ounces, but the last was diseased. Post-mortem examinations in France give an average of 55 to 60 ounces for the brains of the worst class of criminals.

BREAD.—The analysis of bread gives conflicting results, the following being taken from respectable sources:—

	A.	B.	C.
Nitrogen	6·8	8·1	12·6
Water	43·0	37·0	14·6
Starch	44·0	47·4	65·6
Sugar	3·4	3·6	4·8
Fat	1·3	1·5	1·4
Mineral	1·5	2·4	1·0
	100·0	100·0	100·0

In 1862 the bread supplied to the French army was found

Digitized by Google

superior in nitrogen to that of other Continental armies, as follows, French being 100 :—

Prussian . .	50	Austrian . .	70	Belgian . .	91
Spanish . .	69	Dutch . . .	90	Italian . .	96

A sack of flour, containing 280 lbs., will make 368 lbs. of bread in England, and 420 lbs. in United States, that is, 7 lbs. of American are equal to 8 lbs. of English flour. The ingredients for 368 lbs. of English bread are :—280 lbs. flour, 3 gallons water, half gallon yeast, half gallon alum, and 4 lb. salt.

The consumption is as follows :—

	Pounds Bread Weekly per Inhabitant.		Pounds Bread Weekly per Inhabitant.
United Kingdom .	6·3	Spain . . .	7·5
France . . .	9·7	Low Countries . .	8·5
Germany . .	11·2	Denmark . . .	9·1
Russia . . .	9·4	Sweden and Norway	6·5
Austria . .	6·0	United States .	7·5
Italy . . .	8·1	General average .	8·5

The agricultural peasantry of the United Kingdom consume of breadstuffs (says the *Food Journal*) as follows per week :—England, 12 lbs. ; Scotland, 13 lbs. ; Ireland, 20 lbs. See *Food.*

BREAKWATER.

Name.	Date.	Yards Long.	Cost.	Builder.
Plymouth .	1812–41	1,720	£1,550,000	Rennie.
Cherbourg .	1784–1857	4,100	3,200,000	...
Delaware .	...	1,200	...	...
Alexandria .	1873–76	2,000	2,550,000	Greenway.

The Plymouth breakwater has the same quantity of stone, 3,800,000 tons, as the great pyramid of Cheops, and encloses 1120 acres of harbour; Cherbourg, 1927 acres ; and Delaware, 420 acres. See *Docks, Barrages.*

BRICKS.—The consumption in the United Kingdom is about 3 milliards a year, or 250 millions monthly, and in the United States 600 millions monthly. That is, each inhabitant of Great Britain uses 90, and of the United States, 130 bricks yearly. The following table shows the consumption in Great Britain (without Ireland) during 60 years :—

Digitized by Google

Years.	Annual Average. Million Bricks.	Houses Built.	Bricks per Inhabitant.
1821–30	1,210	40,200	78
1831–40	1,530	56,200	90
1841–50	1,662	39,100	85
1851–60	1,884	49,100	86
1861–70	2,070	53,300	84
1871–80	2,490	80,300	90

English bricks measure 9 × 4½ × 3 inches, and weigh 8 lbs., or 3 tons per 1000. An Adams or Liddell machine, 16-horse power, can make 30,000 daily, the average of hand-made bricks per moulder being 4000 a day. Fire-bricks will resist a crushing force varying from 600 up to 3000 lbs. per square inch. See *Houses*.

BRIDGES.

A.—Historical Bridges.

Name.	Length (Feet).	Date.	Over.
Ratisbon	994	1135	Danube.
St. Esprit	2,690	1285	Rhone.
Cordoba	460	1301	Guadalquivir.
Verona	365	1354	Po.
Rialto	99	1588	At Venice.
Prague	1,706	1650	Moldau.
Schaffhausen	364	1758	Rhine.
Neuilly	740	1768	Seine.

B.—Bridges of Great Height.

Name.	Height (Feet).	Span (Feet).	Name.	Height (Feet).	Span (Feet).
Menai	102	579	Brooklyn.	210	1,620
Niagara	190	1,190	Annecy	656	636

Digitized by Google

C.—Remarkable Iron Bridges.

Date.	Bridge.	Over.	Length (Feet).	Iron (Tons).	Cost.	Builder.
1779	Coalbrookdale	Severn	100	378	...	Darby.
1796	Sunderland	Wear	236	260	£27,000	Wilson.
1819	Southwark	Thames	800	5,780	800,000	Rennie.
1825	Menai	Menai Straits	1,050	2,187	212,000	Telford.
1849	Newcastle	Tyne	900	5,050	243,000	Stephenson.
1850	Britannia	Menai Straits	1,511	9,600	602,000	Stephenson.
1855	Niagara	Niagara	850	400	83,000	Roebling.
1859	Victoria	St. Lawrence	7,200	8,230	1,700,000	Stephenson.
1860	Pesth-Buda	Danube	1,900	7,000	...	...
1862	Freyburg	Sarine	1,095	3,100	100,000	...
1867	Cincinnati	Ohio	2,252	...	...	Roebling.
1868	Clifton	Niagara	1,270	...	40,000	...
1874	St. Louis	Mississippi	2,200	4,200	400,000	Eads.
1875	Wuzerabad	Punjaub	9,300	...	650,000	...
1877	Oporto	Douro	1,160	1,600	...	Eiffel.
1878	Annan	Solway	5,120	...	...	...
1879	Empress	Sutlej	6,000	6,650	550,000	...
1880	Moerdyk	Maas	4,850	...	...	...
1880	Pultowa	Dnieper	3,550	...	...	...
1881	Saratov	Volga	4,872	5,150	696,000	Belelioubski.
1882	Benares	Ganges	3,000	...	425,000	...
...	Brooklyn	Hudson	10,500	10,000	1,500,000	Roebling.

The last-mentioned is not completed, and the figures are estimates. A bridge of almost equal magnitude is proposed at Rio Janeiro, length 16,000 feet, to cost £1,600,000,

Digitized by Google

connecting that city with Nitherhoy, and resting on an intermediate island. Iron bridges cost from £100 upwards per lineal foot. In 1816 Captain Brown built an iron bridge of 112 feet, only for foot passengers, at Galashiels, for the sum of £40, the cheapest bridge on record. Suspension bridges have been used in China since the time of the Emperor Ming, 2000 years ago: they were made of iron chains.

D.—Bridges of London.

Name.	Length (Feet).	Cost.	Per Foot.	Date.
London . . .	900	£2,000,000	£2,200	1831
Southwark . .	800	800,000	1,000	1819
Waterloo . .	1,326	1,060,000	800	1817
Blackfriars .	1,000	270,000	270	1869
Charing Cross	1,365	180,000	130	...
Westminster .	1,220	480,000	390	1862
Vauxhall . .	806	412,000	500	1816
Hammersmith	480	80,000	170	1827
Total . .	7,897	£5,412,000	£680	

E.—Bridges in France.

Years.	Cost.	Per Annum.
1814–30 . . .	£13,500,000	£800,000
1831–47 . . .	22,500,000	1,330,000
1848–70 . . .	40,200,000	1,800,000
56 years . . .	£76,200,000	£1,350,000

The quickest bridge ever built was by Mr. Dredge, in 1846, who in 8 days placed an iron bridge, 74 feet span, across the Blackwater, Co. Tyrone, Ireland. The greatest number of bridges built by one man was by Mr. Telford, surnamed Pontifex, who erected 1200 bridges in Scotland, between the years 1800 and 1820.

BUILDINGS.

A.—Historical.

Name.	Locality.	Date.
Parthenon . . .	Athens . . .	B.C. 438
Pantheon . . .	Rome	A.D. 18
Coliseum . . .	Rome	„ 70
St. Sophia . . .	Constantinople . .	„ 532
Mosque of Omar . .	Jerusalem . . .	„ 637
Escurial	Castile	„ 1570
St. Peter's . . .	Rome	„ 1626
St. Paul's . . .	London	„ 1710

Digitized by Google

B.—MODERN.

Name.	Place.	Cost.
Houses of Parliament	Westminster	£3,500,000
Cathedral	Cologne	2,100,000
Law Courts	London	950,000
Post Office	Paris	1,200,000
Opera House	Paris	1,600,000
Hotel de Ville	Paris	1,600,000
Palais de Justice	Brussels	1,200,000

C.—ARCHES.

	Breadth (Feet).	Height (Feet).
Westminster Abbey	33	99
St. Paul's, London	41	82
Amiens Cathedral	42	147
Milan „	55	165
St. Peter's, Rome	84	147

D.—DOMES.

	Diameter (Feet).	Height (Feet).
Pantheon, Paris	67	190
Invalides, „	80	173
Achmet's Mosque	92	120
Caracalla's Baths	112	116
St. Paul's, London	112	215
St. Sophia, Constantinople	115	201
Santa Maria, Florence	139	310
St. Peter's, Rome	139	330
Pantheon, „	142	143

See *Churches, Pyramids.*

BUILDING SOCIETIES.—There are 1267 societies in England and Wales, with 372,000 members; assets, 37 millions sterling. See *Friendly Societies.*

BULLET, VELOCITY OF.

	Grains, Powder.	Velocity, Feet per Second.
Smooth-bores	110	1,500
Rifle	60	963

BULL-FIGHTING.—In 1866 the balance-sheet of 99 bull-rings then in Spain contained the following items:—

	No.	Cost.	Average.
Bulls killed	2,375	£61,000	£26
Horses „	3,561	70,000	20
Bull-rings, rent	99	130,000	1,310
Total		£261,000	

The number of bull-rings in 1878 was still the same. The above does not include the pay of Matadores, Bandilleros, &c.

Digitized by Google

BULLION.—The movement of precious metals over sea since 1860 has been as follows:—

	Gold, Millions £.					
	Imports.		Exports.		Net Imports.	Net Exports.
	1861–70.	1871–80.	1861–70.	1871–80.	1861–80.	1861–80.
Great Britain . .	171	180	112	172	67	...
France	189	151	119	90	131	...
United States . .	31	42	113	74	...	114
Australia . . .	9	5	108	76	...	170
Other countries .	112	126	60	92	86	...
Total . . .	512	504	512	504	...	...
	Silver, Millions £.					
Great Britain . .	93	132	91	119	15	...
France	92	111	78	48	77	...
United States . .	12	18	22	73	...	65
Spanish-America .	2	2	74	68	...	138
India and China	233	126	4	5	350	...
Other countries .	12	13	175	89	...	239
Total . . .	444	402	444	402	...	...
	Total, Millions £.					
Great Britain . .	264	312	203	291	82	...
France	281	262	197	138	208	...
United States . .	43	60	135	147	...	179
Australia . . .	9	5	108	76	...	170
Spanish-America .	2	2	74	68	...	138
India and China .	233	126	4	5	350	...
Other countries .	124	139	235	181	...	239
Grand total .	956	906	956	906	...	...

During the first decade the interchange of precious metals was equal to 12 per cent., during the second to 8 per cent., of the commerce—that is, of the sea-borne merchandise—of the world. This is due to telegraphs and the use of cheques. See *Gold*, *Silver*, *Money*.

BURIAL.—The ordinary depth of graves is:—

England . .	5 ft. 0 in.	Germany . .	6 ft. 3 in.
France . .	5 „ 6 „	Russia . .	6 „ 10 „
Austria . .	6 „ 0 „		

See *Cemeteries*, *Funerals*.

Digitized by Google

BURNT.—The number of lives lost by fire in England and Wales in 1878 was 619 males, and 859 females, without counting deaths from explosions or scalds—that is, 27 per 10,000 deaths of the population, or one in 360. See *Deaths.*

BUTTER.

	Production, Tons.	Lbs. per Milch Cow.	Consumption, Tons.	Lbs. per Inhab.
United Kingdom .	90,000	50	205,000	13
France	90,000	45	65,000	4
Germany. . . .	160,000	55	160,000	8
Russia	90,000	20	86,000	2
Austria	88,000	38	88,000	5
Italy	12,000	17	12,000	1
Holland	46,000	175	10,000	6
Belgium	20,000	90	15,000	6
Scandinavia. . .	55,000	68	40,000	11
Europe . . .	651,000	48	681,000	5
United States . .	370,000	62	350,000	16
Canada	34,000	70	24,000	12
Total . . .	1,055,000	55	1,055,000	7

The average product of a milch cow in England, in milk, butter, &c., is about £11, as compared with £15 in Holland.

The price of butter in London since 1730 has been :—

	Pence.		Pence.
1730–1790 . .	5¾	1841–1860 . .	12¼
1791–1815 . .	13	1861–1880 . .	16
1816–1840 . .	9½	1881–1883 . .	18

The various kinds of butter gives the following analyses :—

	Fat.	Water.	Various.	Total.	Ratio of Caseine.
Devonshire . .	82·7	16·2	1·1	100·0	16·2
Norman . .	82·4	12·6	5·0	100·0	10·6
London . .	47·1	42·4	10·5	100·0	7·8
„ . .	67·5	24·0	8·5	100·0	6·9
Isle of Wight .	86·3	3·8	9·9	100·0	3·3
Jersey . .	78·5	10·4	11·1	100·0	2·5
Oleomargarine .	86·0	10·0	4·0	100·0	0·6

See *Cows.*

Digitized by Google

C

CABLES.—For shipping, see *Anchors:* telegraphic, see *Telegraphs.*

CABS.—There are 9700 in London, and 5500 in Paris: the former average 80,000, the latter 50,000, passengers daily. The medium fare earned per passenger is 15 pence in Paris, 18 pence in London. The earnings in London per cab are 19 shillings a day in "the season," 9 the rest of the year, or 12 shillings all the year round. Of all males who die in England, one in 260 is killed by a cab or other vehicle, and of all females one in 2550. The ratio of these deaths to the general mortality is as follows:—

	Per 10,000 Deaths.		Per 10,000 Deaths.
Birmingham	12	Manchester	24
Sheffield	17	Dublin	33
Glasgow	19	London	37
Liverpool	21	Leeds	79

The value of articles left in cabs in London, and handed over to the police at Scotland Yard, averages £21,000 per annum.

The cost of cabs in Paris to their owners averages 4 francs a day for the driver and 2 francs for the maintenance of each horse, say 5 shillings a day for one-horse cabs. See *Conveyances.*

CALENDAR.—1. Jewish, 383 days: the Jewish year 5644 begins on October 2, 1883.

2. Julius Cæsar's, 365 days, B.C. 46, commenced in March.

3. Mahometan, 355 days, A.D. 622: the Mahometan year 1300 began March 1, 1883.

4. Charles IX., A.D. 1564, commenced 1st January.

5. Pope Gregory XIII., A.D. 1582; now used except in Russia.

6. The Russian year begins on January 13 of our calendar. The Gregorian calendar was adopted in England in 1752, before which date the year began on March 25, which would now be April 5.

For the purpose of finding the day of the week of any event the student will be facilitated by knowing the day on which the year began. The following table shows for 280 years past the day of the week on which the 1st of January fell:—

Digitized by Google

Sunday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
...	...	...	...	1601	1602	1603
1604	...	1605	1606	1607	1608	...
1609	1610	1611	1612	...	1613	1614
1615	1616	...	1617	1618	1619	1620
...	1621	1622	1623	1624	...	1625
1626	1627	1628	...	1629	1630	1631
1632	...	1633	1634	1635	1636	...
1637	1638	1639	1640	...	1641	1642
1643	1644	...	1645	1646	1647	1648
...	1649	1650	1651	1652	...	1653
1654	1655	1656	...	1657	1658	1659
1660	...	1661	1662	1663	1664	...
1665	1666	1667	1668	...	1669	1670
1671	1672	...	1673	1674	1675	1676
...	1677	1678	1679	1680	...	1681
1682	1683	1684	...	1685	1686	1687
1688	...	1689	1690	1691	1692	...
1693	1694	1695	1696	...	1697	1698
1699	1700	...	1701	1702	1703	1704
...	1705	1706	1707	1708	...	1709
1710	1711	1712	...	1713	1714	1715
1716	...	1717	1718	1719	1720	...
1721	1722	1723	1724	...	1725	1726
1727	1728	...	1729	1730	1731	1732
...	1733	1734	1735	1736	...	1737
1738	1739	1740	...	1741	1742	1743
1744	...	1745	1746	1747	1748	...
1749	1750	1751	1752	...	...	...
...	1753*	1754	1755	1756	...	1757
1758	1759	1760	...	1761	1762	1763
1764	...	1765	1766	1767	1768	...
1769	1770	1771	1772	...	1773	1774
1775	1776	...	1777	1778	1779	1780
...	1781	1782	1783	1784	...	1785
1786	1787	1788	...	1789	1790	1791
1792	...	1793	1794	1795	1796	...
1797	1798	1799	1800	1801	1802	1803
1804	...	1805	1806	1807	1808	...
1809	1810	1811	1812	...	1813	1814
1815	1816	...	1817	1818	1819	1820
...	1821	1822	1823	1824	...	1825
1826	1827	1828	...	1829	1830	1831
1832	...	1833	1834	1835	1836	...
1837	1838	1839	1840	...	1841	1842
1843	1844	...	1845	1846	1847	1848
...	1849	1850	1851	1852	...	1853
1854	1855	1856	...	1857	1858	1859
1860	...	1861	1862	1863	1864	...
1865	1866	1867	1868	...	1869	1870

* First year of new style, which began September 2, 1752.

Digitized by Google

In connection with the preceding calendar, it will be easy by means of the following table to find the day of the week of any event:—

January . .	1	8	15	22	29
February . .	5	12	19	26	...
March . . .	5	12	19	26	...
April . . .	2	9	16	23	30
May . . .	7	14	21	28	...
June . . .	4	11	18	25	...
July . . .	2	9	16	23	30
August . .	6	13	20	27	...
September . .	3	10	17	24	...
October . .	1	8	15	22	29
November . .	5	12	19	26	...
December . .	3	10	17	24	31

Allowance must be made for February 29 in leap-years, which were those preceding the blank spaces in the previous calendar.

CAMELS.—A camel has twice the carrying power of an ox; with an ordinary load of 400 lbs. he can travel 12 or 14 days without water, going 40 miles a day. They are fit to work at 5 years old, but their strength begins to decline at 25, although they live usually till 40. They are often fattened at 30 for the butcher, the flesh tasting like beef. The Tartars have herds of these animals, often 1000 belonging to one family. They were numerous in antiquity, for the patriarch Job had 3000. The Timbuctoo or Meharri breed is remarkable for speed, and used only for couriers, going 800 miles in 8 days, with a meal of dates or grain at nightfall. Napoleon conveyed 1500 infantry on camels across the desert from Cairo to St. Jean d'Acre.

Camel, in engineering, signifies an instrument invented by the Dutch for floating vessels over sand-banks. The vessels sunk at Sebastopol in 1854 were removed after the war by means of Colonel Gower's camels, which had a lifting power of 5000 tons.

Digitized by Google

CANALS.

A.—Canals and Navigable Rivers.

	Miles.			Per 100 Square Miles.
	Canals.	Rivers.	Total.	
United Kingdom	3,124	1,786	4,910	4
France	3,150	5,240	8,390	4
Germany	1,320	15,760	17,080	8
Russia	873	20,942	21,815	1
Austria	413	2,925	3,338	1
Italy	320	1,590	1,910	2
Spain	270	815	1,085	½
Portugal	...	470	470	1½
Belgium	535	710	1,245	11
Holland	930	340	1,270	6
Denmark	200	...	200	1½
Sweden and Norway	100	460	560	¼
Europe	11,235	51,038	62,273	2
United States	3,330	16,850	20,180	1
Canada	535	2,820	3,355	¼
Brazil	...	22,210	22,210	1
India	2,240	2,600	4,840	¼
China	5,270	3,800	9,070	½
Total	22,610	99,318	121,928	...

The average cost of making canals has been £9600 in the United Kingdom, £10,000 in France, £9800 in the United States, and £15,500 in Canada, per mile.

B.—Remarkable Canals.

Date.	Name.	Miles.	Cost.	Per Mile.	Country.
1668	Languedoc	160	£680,000	£4,250	France.
1776	Bridgewater	38	360,000	9,050	England.
1785	Eyder	26	510,000	19,500	Denmark.
1822	Caledonian	60	1,140,000	19,000	Scotland.
1825	Helder	60	900,000	15,000	Holland.
1825	Erie	363	1,820,000	5,000	United States.
1830	Cincinnati	306	610,000	2,000	"
...	Rideau	132	800,000	6,060	Canada.
...	Welland	41	1,400,000	34,150	"
1832	Burgundy	158	2,220,000	14,050	France.
1854	Bengal	900	2 000,000	2,200	India.
1869	Suez	92	17,030,000	185,000	Egypt.
1874	North Sea	14	2,030,000	145,000	Holland.

Digitized by Google

C.—Suez Canal.

Year.	Ships.	Tons.	Average Tonnage.	Fees.
1870	486	436,000	900	£206,000
1875	1,494	2,940,000	1,960	1,156,000
1880	2,026	4,345,000	2,150	1,630,000
1881	2,540	5,460,000	2,145	2,049,000

Length, 92 miles; depth, 26 feet. The canal was 13 years in construction. Tolls average £860 per vessel, or 11 shillings per ton of net tonnage. Steamers go through in 40 hours, of which 17 steaming. Tugs are provided for sailing vessels at a charge of £200. The saving to commerce by reason of the canal is above 4 millions sterling per annum, that is, 2 millions after payment of the fees. The flags of vessels passing through, since 1870, have been 77 per cent. British, 9 French, 4 Dutch, and 10 per cent. of other nations.

The returns for 1882 show receipts £2,421,000, from which deducting £1,200,000 for working expenses, the net profit is equal to 7 per cent. on the total cost of the work.

The cost of construction was as follows:—

Preliminary expenses	£3,800,000
Machinery	2,200,000
Excavation	7,700,000
Docks and harbours	1,400,000
Transport, buildings, &c. . . .	1,936,000
Total	£17,036,000

The British Government owns one-fifth of the shares of the canal, having bought 176,602 from the Khedive in 1876, for £3,976,600, being 12½ per cent. premium. The coupons having been cut off, the Khedive pays the interest till 1892. The Canal shortens the voyage between England and the East by one-third; that is, it enables two vessels to do the same work that would require three by the Cape of Good Hope, the distance in nautical miles being as follows:—

London to	By Canal.	By Cape.	Saving Miles.
Bombay	6,330	10,595	4,265
Madras	7,330	10,830	3,500
Calcutta	7,950	11,450	3,500
Singapore	8,345	11,670	3,325

The proportions of Eastern and Southern trade passing to

Digitized by Google

and from Great Britain through the Suez Canal appear as follows:—

British Trade with	By Canal.	By Cape.	Total.
Australia . . .	£12,000,000	£43,000,000	£65,000,000
China and Japan .	23,000,000	2,000,000	25,000,000
India, &c. . . .	69,000,000	15,000,000	84,000,000
Total . .	£104,000,000	£60,000,000	£164,000,000

The value of what passes through the Canal is equal to one-seventh of the total foreign commerce of Great Britain.

D.—Panama Canal.

The estimate of works is as follows:—

Nature.	Excav. Million Cubic Yds.	Cost per Cubic Yd.	Sum.
Clay	62	15d.	£3,875,000
Rock	11	9s.	4,950,000
Submarine . . .	9	15s.	6,750,000
Subsidiary canals, &c. .	...	...	3,000,000
Dam at Gamboa . .	...	...	4,000,000
Piers, floodgates, &c. .	...	...	3,920,000
Total			£26,495,000

The clay excavation costs 25 per cent. more than in making the Suez Canal, the average for which was a shilling per cubic yard. The number of workmen averages 3000, and the death-rate is said not to exceed 30 per thousand per annum. It is expected to finish by 1888. The length will be 46 miles, including a tunnel of 4 miles or 7000 yards, which will be 100 feet wide by 160 feet high, which is estimated at something over 5½ millions sterling, or £800 per yard, being four times as much as per lineal yard of the Mont Cenis tunnel. When completed it will save about 10,000 miles of voyage between Europe and the Pacific, and a fee of 20 shillings per ton on half the amount of traffic that passes through the Suez Canal will amply repay the outlay.

E.—Canals Projected.

Locality.	Miles.	Estimated Cost.	Per Mile.
Alexandria and Suez . .	150	£	£
Manchester and Liverpool .	44	5,200,000	120,000
Malacca	66	4,000,000	60,000
Bordeaux and Narbonne .	255	22,000,000	87,000
Corinth	4	1,200,000	300,000
Dniester and Vistula . .	460	21,000,000	45,000
Black Sea and Caspian .	310	9,000,000	30,000

Digitized by Google

F.—FRENCH CANALS.

Date.	Miles.	Capital Cost.	Per Mile.
1800	766	£4,600,000	£6,100
1813	890	7,700,000	8,600
1830	1,450	15,100,000	10,400
1847	2,690	27,800,000	10,300
1870	3,150	31,400,000	10,000

The traffic, counting one ton per 60 miles, has risen as follows:—

	Tons.		Tons.
1849 . . .	9,200,000	1869 . . .	17,060,000
1859 . . .	12,100,000	1879 . . .	18,130,000

G.—UNITED STATES CANALS.

	Miles.			Cost (Millions £).	Tons Carried (Thousands).	Earnings per Mile.
	In Use.	Abandoned.	Total.			
New York . .	608	357	965	16	7,770	£430
Pennsylvania .	629	477	1,106	11	6,100	515
Ohio	674	205	879	4	840	60
Maryland . .	194	...	194	2	1,310	370
New Jersey . .	171	...	171	2	1,860	750
Illinois . . .	102	...	102	1½	750	220
Virginia . . .	43	197	240	2	4,045	490
Other States .	94	728	822	5½	2,368	424
Total . .	2,515	1,964	4,479	44	25,043	£355

The earnings per mile are computed on the canals in use. In the United States water-carriage averages 4 shillings per ton per 100 miles, in France 18 shillings. The canals of the United Kingdom carry 30 million tons per annum, and earn 2 shillings per ton net over expenses.

The Imperial Canal of China is the longest in the world, and the greatest in point of traffic: its length is 2100 miles, including river sections (or 825 miles the canal proper), and it connects 41 cities situated on its banks. The next in importance is the Vishney, in Russia, 1434 miles (including a part of the Volga), by which St. Petersburg is connected with the Caspian Sea, the value of merchandise carried amounting to 22 millions sterling per annum. Russian canals carry goods worth 105 millions sterling yearly, and employ 300,000 boatmen.

CANOE.—The Rob Roy, which navigated 3000 miles of European rivers, was 13 feet long, 26 inches wide, and 12 inches deep.

Digitized by Google

CAPITAL.

A.—Capital and Income of Great Britain.*

Valuer.	Date.	Capital, Millions £.	Income, Millions £.	Capital per Inhab.	Income per Inhab.
Petty . .	1664	250	42	£45	£8
Davenant .	1701	490	55	90	10
Young . .	1770	1,100	122	153	16
Pitt . . .	1800	1,800	230	170	22
Colquhoun	1811	2,180	250	180	21
Liverpool .	1822	2,600	280	186	20
Pebrer . .	1833	3,750	350	150	14
Porter . .	1840	4,100	480	152	18
Levi, &c. .	1860	5,560	760	195	26
Mulhall .	1882	8,720	1,247	248	35

B.—Elements of British Capital.

	Millions £.		Per Inhab.		Aliquot Parts.	
	1860.	1882.	1860.	1882.	1860.	1882.
Houses . . .	1,160	2,280	£41	£65	20·8	26·2
Railways . . .	348	750	12	21	6·3	8·6
Shipping . . .	42	120	2	4	0·8	1·4
Bullion . . .	95	143	3	4	1·7	1·6
Lands . . .	1,840	1,880	65	53	33·0	21·6
Cattle, &c. . .	460	410	16	12	8·3	4·7
Merchandise . .	210	350	7	10	3·8	4·0
Foreign Loans . .	420	1,100	15	31	7·6	12·6
Furniture . . .	580	1,140	20	32	10·4	13·1
Roads, Works, &c. .	405	547	14	16	7·3	6·2
Total . . .	5,560	8,720	£195	£248	100·0	100·0

For other countries, see *Wealth, Income.*

C.—Increase and Distribution of British Capital.

	Millions £.		Capital per Inhabitant.		Aliquot Parts.	
	1840.	1877.	1840.	1877.	1840.	1877.
England . . .	3,320	6,552	£210	£262	86·8	82·3
Scotland . . .	196	970	81	277	5·1	12·2
Ireland . . .	308	438	38	83	8·1	5·5
United Kingdom .	3,824	7,960	£147	£239	100·0	100·0

* England till 1800, Great Britain 1811 and 1822, United Kingdom from 1833.

Digitized by Google

The above table is based on the Probate Court returns for 1840 and 1877, but the real ratio for Scotland in 1840 was probably 6 per cent. of the United Kingdom, as mortgages were not then counted in that country.

D.—British Capital in Stocks and Shares.

	Millions £.		
	Amount Quoted on Stock Exchange.	Amount held in Great Britain.	Interest Earned in Great Britain.
National debt . .	762	700	21
Colonial debts . .	220	200	10
Foreign „ . .	2,016	400	22
British railways .	730	700	30
Foreign and Colonial	825	275	14
Banks . . .	272	260	15
Docks, gas, &c. . .	125	120	10
Total . ..	4,950	2,655	122

E.—Capital Called up in 12 Years: All Nations.

Years.	Millions £.			
	Loans.	Companies.	Total.	Annual Average.
1871–74 . .	930	1,230	2,160	540
1875–78 . .	520	420	940	235
1879–82 . .	430	820	1,250	312
Total . .	1,880	2,470	4,350	362

Great Britain provided about one-fourth of the total; some estimates say one-third.

F.—New Capital Requirements, 1879–82.

	Amount in Millions £.		Amount in Millions £.
Great Britain .	182	Spain . . .	25
France . .	301	Portugal . . .	11
Germany . .	38	Switzerland . .	17
Russia . . .	107	Belgium . . .	27
Austria . .	75	Holland . . .	14
Italy . . .	40	United States . .	210

Digitized by Google

CAPTURES.—During the wars with Buonaparte the British navy captured or destroyed the following:—

Ships of the line . . .	156
Frigates	382
Corvettes	662
Brigs	1,306
Total . .	2,506

In the Franco-German war the Germans took from France 7234 pieces of cannon, including 3485 field-guns: they also took 446,000 prisoners, of whom 384,000 were sent into Germany, including 11,860 officers.

CARBONATE OF LIME.—The number of grains per gallon of water in the following rivers is:—

Danube, at Vienna .	8·37	Rhine, at Bâle . .	12·79
Seine, at Paris . .	11·30	Thames, at Battersea	15·10

CARBONIC ACID.—The quantity exhaled in 24 hours:—

Person.	Age.	Oz. Exhaled.	Person.	Age.	Oz. Exhaled.
Girl . . .	10	9	Boy	16	16
Boy . . .	10	10	Man	28	17
Woman . .	19	12			

The quantity varies according to exertion, viz.:—

	Oz. per Hour.		Oz. per Hour.
Sleeping	0·6	Riding	4·0
Walking 2 miles. per hr.	2·1	Swimming . . .	4·4
„ 3 „ „	3·0	Treadmill . . .	5·5

CARRIAGES.—The number used in Great Britain has increased since 1812 faster than wealth, as appears on comparing the licenses with the number of persons paying income-tax on more than £200 a year:—

Year.	Carriages.	Over £200 Income.	Ratio of Carriages.	Carriages per 1000 Inhabitants.
1812	63,130	39,765	158 to 100	5
1830	85,060	...	...	5
1860	245,000	85,530	287 to 100	11
1870	325,000	130,375	250 „ 100	12
1880	463,000	210,430	221 „ 100	15

CARRIER PIGEONS.—In 1877 the newspaper *Nationale* of Paris had 10 pigeons which carried despatches daily between Versailles and Paris in 15 to 20 minutes. In November 1882 some pigeons, in face of a strong wind, made the

Digitized by Google

distance of 160 miles, from Canton Vaud to Paris, in 6½ hours, or 25 miles per hour.

CATS.—The number in the United Kingdom is fully 7 millions, although a remarkable decrease has been noticed in many places, especially seaports, probably owing to the demand for exportation. They came into England before the Conquest, for the tariff of indemnity, in the 10th century, valued them at two pence, being equal to two hens or two gallons of beer. Southey mentions that the first settlers in Brazil paid £300 for a cat, and for kittens, their weight in gold-dust. An offer of £500 for a Persian cat at the Sydenham Cat Show in 1869 was refused.

CATHOLICS.—See *Roman Catholics, Religion.*

CATTLE.

A.—Number in All Countries in 1880.

	Thousands.			
	Cows.	Horses.	Sheep.	Pigs.
United Kingdom	9,905	2,905	27,896	3,190
France	11,480	2,833	23,370	5,810
Germany	15,790	3,360	25,200	7,130
Russia	22,770	16,160	48,820	10,514
Austria	13,133	3,760	21,418	7,080
Italy	3,490	658	6,980	1,570
Spain	3,090	590	22,800	4,465
Portugal	530	68	2,417	858
Holland	1,462	279	898	337
Belgium	1,242	283	586	632
Denmark	1,348	352	1,720	504
Sweden	2,237	466	1,503	417
Norway	1,017	152	1,686	101
Greece	258	97	2,292	30
Roumania	3,600	600	6,180	2,310
Europe	91,352	32,563	193,766	44,948
United States	35,926	11,202	35,193	47,634
Canada	2,702	866	3,330	1,425
Australia	7,863	1,065	65,915	815
River Plate	18,390	6,150	76,230	362
Cape Colony	1,330	241	11,280	164
Algeria	1,204	350	8,788	300
The World	158,767	52,437	394,502	95,648

Digitized by Google

B.—Ratio of Cattle to 100 Inhabitants.

	Cows.		Sheep.		Pigs.	
	1855.	1880.	1855.	1880.	1855.	1880.
United Kingdom .	27	28	112	80	10	9
France . . .	34	31	96	65	14	16
Germany . . .	33	34	65	55	12	16
Russia . . .	33	27	66	62	17	13
Austria . . .	50	34	56	56	27	19
Italy . . .	18	12	35	25	10	6
Spain . . .	10	19	100	145	7	28
Portugal . . .	19	13	50	55	19	21
Holland . . .	42	37	21	22	17	8
Belgium . . .	27	22	15	11	11	11
Denmark . . .	60	70	80	90	10	26
Sweden . . .	46	50	42	33	15	9
Norway . . .	57	53	70	90	25	5
Switzerland . .	42	37	25	14	12	12
Greece . . .	20	15	170	135	14	2
Servia . . .	60	45	215	160	102	75
Roumania . .	40	37	80	67	19	16
Europe . .	32	29	70	63	15	15
United States . .	91	71	108	70	114	94

The numerical increase in Europe was as follows :—

	1855.	1880.	Ratio of Increase.
Cows . .	82,707,000	91,530,000	10 per cent.
Sheep . .	181,360,000	194,151,000	7 „
Pigs . .	39,095,000	45,091,000	15 „

Population in Europe rose 22 per cent. in the same interval.

C.—Cattle in United Kingdom, 1835–81.

Years.	Number (Thousands).			Annual Slaughter (Thousands).		
	Cows.	Sheep.	Pigs.	Cows.	Sheep.	Pigs.
1835–40	6,331	22,270	2,260	1,328	8,670	1,552
1841–45	6,618	26,110	2,313	1,386	10,168	1,565
1846–50	6,907	28,865	2,434	1,449	11,382	1,622
1851–55	7,261	30,730	2,685	1,523	12,176	1,788
1856–60	7,777	32,111	2,940	1,619	12,689	1,973
1861–65	8,248	33,802	3,027	1,734	13,377	2,015
1866–70	8,835	35,209	3,104	1,846	13,965	2,071
1871–75	9,081	34,060	3,080	1,903	13,471	2,047
1876–81	9,506	31,770	3,120	1,994	12,466	2,080

Digitized by Google

D.—Cattle Reduced to a Common Denomination.

The unit is a cow or horse, and sheep or pigs are counted ten for one:—

	Cattle (Million Head).	Value in Millions £.	Value to Each Inhabitant.	Head Cattle per 100 Inhabitants.
United Kingdom .	15·9	235	£6 14 0	45
France . . .	17·2	212	6 1 0	49
Germany . . .	22·4	230	5 2 0	50
Russia . . .	45·1	345	4 12 0	61
Austria . . .	19·7	205	5 11 0	54
Italy . . .	5·1	52	1 18 0	18
Spain . . .	6·4	57	3 10 0	39
Portugal . . .	1·0	11	2 13 0	22
Holland . . .	1·9	33	8 5 0	47
Belgium . . .	1·6	30	5 8 0	29
Denmark . . .	1·9	31	15 18 0	99
Sweden . . .	2·9	42	9 15 0	66
Norway . . .	1·4	21	11 0 0	72
Greece . . .	0·6	6	3 9 0	34
Roumania . . .	5·0	48	12 0 0	125
Europe . .	148·0	1,558	£5 4 0	49
United States . .	56·4	378	7 10 0	110
Canada . . .	4·0	35	8 0 0	91
Australia . . .	15·7	66	24 0 0	573
River Plate . .	32·2	62	24 0 0	1,076
Cape Colony . .	2·7	19	17 0 0	246
Algeria . . .	2·4	24	8 2 0	81
The World .	261·4	2,142	£5 19 0	70

E.—Cattle in United States.

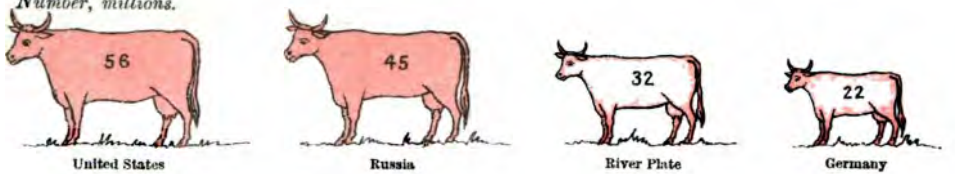
	Thousands Omitted.				No. per 100 Inhabitants.	
	1850.	1860.	1870.	1880.	1860.	1880.
Milch cows . .	6,390	8,592	8,943	12,444	27	25
Other „ . . .	11,394	17,030	14,890	23,482	55	47
Total cows .	17,784	25,622	23,833	35,926	82	72
Horses	4,331	6,253	7,155	10,364	20	21
Asses, &c. . . .	564	1,155	1,132	1,811	4	3
Horses and asses	4,895	7,408	8,287	12,175	24	24
Sheep	21,722	22,474	28,481	35,193	71	70
Pigs	30,353	33,512	25,133	47,685	106	96
All cattle* .	27,887	38,629	37,482	56,389	123	112

* Reduced to common denomination, as in Table D.

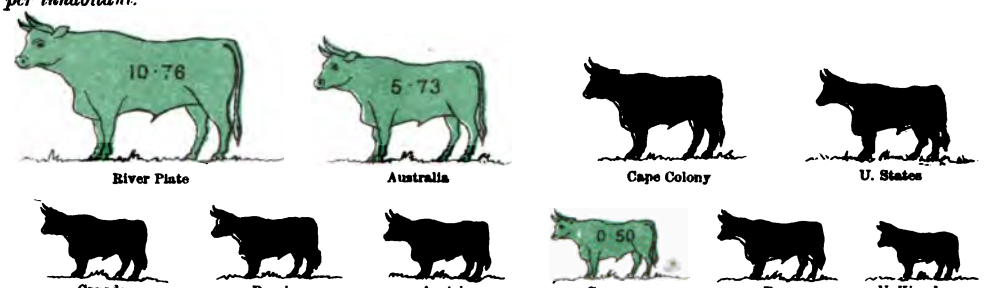
Digitized by Google

CATTLE.

Number, millions.



Cattle per inhabitant.



See Table D, page 76 *The above includes cows, horses, sheep, &c., reduced to common denominator.*

Digitized by Google

Digitized by Google

CAVALRY.

	Number.	Ratio to Army.	Troopers per 10,000 Inhab.	Troopers per 1000 Horses.
Great Britain	18,000	9·5	5	6
France	69,000	14·0	18	24
Germany	67,000	15·0	15	20
Russia	86,000	10·2	11	5
Austria	51,000	18·6	14	14
Italy	34,000	9·1	12	52
Spain	13,000	14·5	8	22
Portugal	3,000	9·0	8	43
Holland	4,000	6·2	10	15
Belgium	5,000	10·8	9	18
Denmark	2,000	5·5	10	6
Sweden and Norway	7,000	11·6	11	12
Europe	359,000	12·0	12	11
United States	8,000	30·0	2	1
Total	367,000	12·1	11	8

The last column indicates the number of troopers, on peace footing, compared with the number of horses in each country.

CEMETERIES.	No.	Per 100,000 Inhabitants.
England	11,304	45
Wales	958	71
France	38,041	101

London has 22 cemeteries, with an aggregate of 2210 acres—that is, an acre for 1700 inhabitants. Besides those above stated for England and Wales, there are 1411 cemeteries that have been closed by order of Council. See *Burials, Funerals.*

CENTENARIANS.—The most remarkable were:—1. Countess of Desmond, killed by falling from a cherry-tree, in her 146th year; 2. Thomas Parr, died after a dinner-party at Lord Arundel's, aged 152; 3. Cardinal de Salis, who recommended daily exercise in all weathers, age 110; 4. John Riva of Venice, who chewed citron bark daily, died aged 116, leaving a son of 14 years.

Lejoncourt, in the 18th century, published a list of 49 persons who had died between the ages of 130 and 175 years.

Besides the foregoing, Mrs. Ann Butler (*née* Winn) died at Portsmouth, January 1883, aged 103 years, daughter of Admiral Winn: also at Ruabon, Wales, in March 1883, Mrs. Betty Lloyd, aged 107, her funeral being attended by two of her children over 80 years.

Digitized by Google

CHARCOAL.—To make a ton will be required of wood as follows:—

	Tons.		Tons.		Tons.
Oak . . .	4·4	Beech . .	5·1	Birch . .	5·9
Chestnut . .	4·5	Elm . .	5·2	Pine . . .	6·0

For heating power 12 lbs. charcoal are equal to 10 lbs. coal or 13 lbs. coke. It is much used in America, France, and Italy. The ironworks of the United States consume 600,000 tons charcoal yearly, the yield of 50,000 acres, the average being 12 tons per acre. At Noirmoutiers, in France, 200 furnaces are constantly at work making charcoal from seaweed, 20 tons of fresh weed or 4 tons of dry producing 1 ton of charcoal, value 10 shillings. In Ireland it is often made from peat.

CHARITIES.

A.—Charitable Revenues in United Kingdom.

Subscriptions, &c.	£6,600,000
Bequests	650,000
English endowments	2,520,000
Irish endowments	270,000
Total	£10,040,000

B.—Charitable Expenditure in United Kingdom.

Charity schools	£4,200,000
Asylums and homes	2,600,000
Bible societies	2,040,000
Hospitals	1,200,000
Total	£10,040,000

C.—London Charities, 1881.

	Number.		Expenditure (Thousands Omitted).	
	1859.	1881.	1859.	1881.
Orphanages	181	270	£409	£458
Homes for aged . . .	126	284	88	770
Asylums for blind, &c. . .	9	44	25	156
Hospitals and dispensaries .	92	187	301	596
Charity schools . . .	60	105	400	450
Bible Missions . . .	14	113	460	1,691
Total . .	482	1,003	£1,683	£4,121

Digitized by Google

London charities averaged 12 shillings per inhabitant in 1859, and 22 shillings in 1881. Hospital Sunday collections in churches average £30,000 for city hospitals.

D.—ENGLISH CHARITABLE ENDOWMENTS, 1876.

	1837.	1876.
Capital	£42,600,000	£51,300,000
Income	1,940,000	2,198,000

	1876.	
	Capital.	Income.
Real estate	£31,100,000	£1,558,000
Stocks	20,200,000	640,000
Total	£51,300,000	£2,198,000

The real estate comprises 154,000 acres of land and some house property.

E.—FRENCH CHARITIES.

Endowments	£2,400,000
Annual bequests	1,194,000
State subsidy	460,000
Donations	1,500,000
Total	£5,554,000

F.—ITALIAN CHARITIES.

Endowed capital	£65,300,000
Income	3,640,000
Cost of management	1,760,000
Net proceeds for charity	1,880,000

G.—CHARITABLE BEQUESTS PER ANNUM.

Country.	Amount.	Per £1000 Assets.	Per Million £ of National Earnings.
United Kingdom	£650,000	£4	£0 10 6
France	1,190,000	6	1 2 0
Italy	124,000	2	0 9 0

See *Hospitals.*

CHEESE.

A.—COMPONENT PARTS.

	Chester.	Parma.	Brie.	Dutch.	Gruyere.
Water	30·4	30·3	34·0	41·4	32·1
Nitrogen	8·0	7·9	5·1	7·0	8·0
Fat	36·6	31·1	53·3	42·8	41·8
Various	25·0	30·7	7·6	8·8	18·1
	100·0	100·0	100·0	100·0	100·0

Digitized by Google

B.—PRODUCTION AND CONSUMPTION.

	Tons.		Lbs. consumed per Inhabitant.
	Production.	Consumption.	
United Kingdom . .	126,000	216,000	13
France	15,000	50,000	3
Germany	80,000	80,000	4
Austria	45,000	45,000	3
Italy	14,000	21,000	2
Switzerland . . .	40,000	22,000	18
Holland	40,000	10,000	6
United States . . .	117,000	50,000	2
Canada	33,000	16,000	9
Total . . .	510,000	510,000	4

It takes a gallon of milk to produce 1 lb. of cheese. The Camembert cows in France average yearly £36 per head in cheese. In Canada the average value of cheese is £7 per milch cow—that is, 280 lbs. at 6d.

CHEQUES.—The use of cheques compared with money at various dates and places shows thus:—

Date.	Place.	Per Cent.	
		Cheques.	Notes and Coin.
1839	London . . .	93·2	6·8
1859	„ . . .	96·8	3·2
1881	„ . . .	98·9	1·1
1859	Provinces . . .	47·3	52·7
1872	„ . . .	68·2	31·8
1881	England and Wales .	97·0	3·0
1881	New York . . .	98·7	1·3
1881	Western States . .	81·7	18·3
1881	United States . .	91·6	8·4
1881	United States Banks .	94·4	5·6

By referring to *Clearing-House*, it will be seen that the cheques paid in London and New York in one month aggregate 1270 millions sterling, which is much in excess of all the gold and silver coin in existence. See *Bullion*, *Money*, *Clearing-House*.

CHESTNUTS.

	France.	Italy.
Acres	1,220,000	1,226,000
Bushels	15,200,000	23,100,000
Do. per 100 inhabitants .	40	85

Digitized by Google

The French crop is valued at 3, the Italian at 4, millions sterling; the average yield in France 12, in Italy 18, bushels per acre. Italy exports 500,000 bushels.

CHILDBIRTH, DEATHS IN.—The average for 20 years in England and Wales has been 32 per 10,000 births—that is, $1\frac{1}{2}$ per cent. of all mothers die sooner or later in childbirth, since each mother has on an average 5 children.

CHIMNEY.—The highest in the world is that at Port Dundas, Glasgow, 454 feet.

CHINCHONA, or JESUIT'S BARK.

A.—Annual Production.

	Lbs.
Peru	8,900,000
India	2,200,000
Java	110,000
Jamaica	21,000
Total	11,231,000

B.—Indian Plantations.

Planted, A.D.	Locality.	Trees (Thousands).	Crop, Lbs. Bark.
1860	Nilghiri	540	180,000
1861	Darjeeling	4,680	378,000
1869	Ceylon	77,000	1,260,000
1875	Burmah	2	200
	Total	82,222	1,818,200

Indian bark yields from 4 to 5 per cent. of sulphate of quinine, but the superior quality introduced into Java by Mr. Charles Ledger gives from 6 up to 15 per cent. The plantations in India and Ceylon are valued at 5 millions sterling.

London imports 8 million lbs. yearly, and such is the demand that the price in Bolivia has doubled since 1870, being now 4s. per lb. Some Germans have planted near La Paz 600,000 trees of the Ledger or Caupolican species.

CHOLERA. See *Plague.*

CHURCH.

A.—Church of England, Income and Distribution.

Tithes	£4,054,000
Committee grants	776,000
Other sources	973,000
Total	£5,803,000

Digitized by Google

Clergy.	No.	Income.	Per Head.
Bishops . . .	33	£168,000	£5,100
Canons . . .	166	240,000	1,440
Rectors . . .	11,780	4,830,000	408
Curates . . .	5,050	565,000	112
Total . .	17,029	£5,803,000	£341

NUMBER OF LIVINGS.

Proprietor.	No.
Crown	967
Noblemen	5,357
Bishops	2,088
Various	4,476
Total	12,888

The Ecclesiastical Report for 1880 shows that in 40 years the Commissioners have expended 22½ millions in creating new endowments to an annual value of £746,000 in aid of 4700 distressed parishes, say £160 each. The Commissioners distribute about £700,000 a year in creating new benefices, to an average amount of £23,000 per annum. Balance still in hand, £8,200,000. The above tables do not include collegiate endowments, worth £550,000 a year. Total clergy of Church of England 19,000, including 2000 schoolmasters. The Church of England has, moreover, 232 clergymen in Scotland, 820 in Ireland, and 2700 in colonies and foreign countries, making a grand total of 22,752.

B.—CATHOLIC CHURCH IN BRITISH EMPIRE.

	Bishops.	Priests.	Churches.	Laity.
England . .	15	2,112	1,188	1,066,000
Scotland . .	6	306	295	318,000
Ireland . .	28	3,290	2,760	3,952,000
Canada . .	24	1,210	1,050	2,150,000
Australia . .	16	376	787	584,000
India . .	22	1,179	700	1,318,000
Other colonies .	20	315	240	466,000
Total .	131	8,788	7,020	9,854,000

The average income in the United Kingdom is £400 for a bishop, and £80 for a priest. In India it is £260 per bishop, and £36 per priest. In Canada and Australia it is higher than in England.

Digitized by Google

C.—Protestant Church in Ireland.

Number of clergy	820	Donations	£118,000
Number of laity	635,100	Total income	248,000
Endowment	£130,000	Endowed capital	3,260,000

There are 12 bishops, who receive £41,500 per annum, average £3600 each.

In November 1880 the residue of property formerly belonging to the Protestant Church in Ireland was valued at 12 millions, producing a revenue of £574,000, to be devoted to purposes of general utility or beneficence.

D.—Number of Churches in England and Wales (1883).

Church of England	14,573	Roman Catholic	824
Methodist	11,514	Quaker	375
Independent	2,603	Presbyterian	201
Baptist	2,243	Jewish	60
Calvinist	895	Various	2,628
Total	35,916		

In the above are not included 364 Roman Catholic chapels attached to religious houses, possessing no marriage licence.

E.—Number of Churches in United States.

	Churches.		Ministers.	Laity (Thousands Omitted).		Property, 1870 (Thousands Omitted).
	1870.	1880.	1880.	1870.	1880.	
Baptist	13,962	24,794	15,401	5,450	8,532	£8,400
Methodist	21,337	28,281	16,759	8,160	10,944	14,100
Presbyterian	7,071	10,474	8,026	3,375	3,564	10,600
Roman Catholic	3,806	5,975	6,366	3,982	6,371	12,200
Lutheran	1,145	5,556	3,102	825	2,740	1,200
Christian Discip.	2,822	4,681	3,658	1,082	2,268	1,200
Congregational	2,715	3,689	3,589	1,395	1,334	5,100
Episcopal	2,601	3,104	3,564	1,041	1,412	7,200
United Brethren	937	2,573	2,563	330	1,196	400
Unitarians	310	342	394	194	172	1,200
Quakers	662	621	876	280	272	800
Jews	152	269	202	73	70	1,000
Mormons	171	654	3,906	120	440	200
Various	5,391	1,154	8,824	11,808	10,841	7,200
Total	63,082	92,167	77,230	38,115	50,156	£70,800

Digitized by Google

F.—Church in France.

Clergy	42,543
Sisters of charity, &c.	125,400
Church endowed incomes,	£190,000
Schools, convents, asylums	£800,000

The capital value of endowments for churches, schools, convents, and asylums amounted in 1880 to £23,300,000. The annual State subsidy is £1,740,000, equal to one shilling per inhabitant, or £40 a year for each priest. The ordinary income of a Curé is £80.

G.—Church Property in Italy.

The Italian Government confiscated properties worth 55 millions sterling, of which nearly half has been sold, viz. :—

	Capital.	Income.
Sold (1868-80)	£21,200,000	£1,450,000
Held by State	33,900,000	1,240,000
Total	£55,100,000	£2,690,000

Out of the above income the Italian Government pays £428,000 per annum to 32,590 monks and nuns, say £13 each. The Pope has always refused the allowance of £120,000 a year offered him, and is maintained by Peter's pence from all nations. The number of parochial clergy in Italy is 20,067, of whom 2236 have less than £30 a year income.

H.—Church in Austria.

Bishops	98	Friars	9,600
Priests	55,200	Nuns	5,200

The Church forests and other properties are valued at 19 millions sterling. Total church revenue, £1,890,100, the highest income being £30,000 per annum to the Archbishop of Olmutz. Priests average £30 a year.

I.—Church of Russia.

Bishops	40	Convents	550
Parish priests	49,200	Churches	35,400

The State subsidy is £800,000 per annum, besides which the Church lands give a revenue of £17 to each priest.

Digitized by Google

K.—Churches in Australia.

	Churches.	Ministers.	Laity.	Churches, per 100,000 Inhabitants.
Church of England	1,398	659	982,000	142
Roman Catholic	791	378	581,000	136
Methodists	1,608	359	399,000	402
Presbyterians	1,046	370	364,000	285
Various	1,170	389	535,000	218
Total	6,013	2,155	2,861,000	210

	Churches.	Ministers.	Sunday Schools.
New South Wales	1,330	706	1,285
Victoria	2,843	759	1,557
South Australia	725	165	570
New Zealand	553	277	360
Queensland	172	76	100
Tasmania	319	139	112
West Australia	71	33	40
Total	6,013	2,155	4,024

CHURCHES.

A.—Churches and Clergy.

	Churches.	Clergy.	Churches, per 100,000 Inhabitants.
England	35,916	41,320	144
Ireland	4,540	4,110	88
France	39,314	42,543	105
Germany	37,720	31,910	84
Austria	36,180	61,240	98
Russia	42,670	49,330	55
Italy	22,260	40,150	81
Spain	18,600	42,765	112
United States	92,167	77,230	181
Australia	6,013	2,155	210

B.—Largest Churches.

Name.	City.	Square Yards.	Capacity, No. of Persons.
St. Peter's	Rome	13,600	54,000
Duomo	Milan	9,200	37,000
St. Paul's	Rome	8,000	32,000
St. Paul's	London	6,500	26,000
Cathedral	Antwerp	6,000	24,000
St. Sophia	Constantinople	5,700	23,000
Notre Dame	Paris	4,200	21,000
Cathedral	Pisa	3,300	13,000
St. Mark's	Venice	1,800	7,000

Digitized by Google

CITIES.

	Population (Thousands).	Per 1000 Inhabitants.			Mean Annual Temperature.
		Births.	Deaths.	Increase.	
Alexandria . .	232	45·0	34·2	10·8	...
Algiers . . .	62	..	30·1	...	64·3
Amsterdam . .	326	36·7	23·7	13·0	49·9
Antwerp . . .	182	...	24·7	...	...
Baltimore . .	332	...	21·1	...	54·9
Barcelona . .	260	29·2	...	...	63·0
Belfast . . .	185	...	28·2	...	52·1
Berlin	1,129	37·5	27·6	9·9	48·2
Birmingham . .	402	37·6	19·8	17·8	48·2
Bombay . . .	644	25·6	33·7	...	81·3
Bordeaux . .	212	...	26·7	...	57·0
Boston . . .	363	30·0	23·5	6·5	48·4
Boulogne . . ,	123	...	...	...	54·4
Bradford . . .	184	33·1	21·1	12·0	...
Breslau . . .	273	37·7	32·5	5·2	46·7
Brighton . . .	108	30·6	19·0	11·6	...
Bristol . . .	207	34·5	19·6	14·9	51·7
Brussels . . .	407	34·7	23·9	10·8	50·7
Bucharest . .	222	29·5	24·5	5·0	46·4
Buda-Pesth . .	370	35·8	35·2	0·6	47·5
Buenos Ayres .	212	31·7	30·1	1·6	62·8
Cairo	315	...	...	...	72·2
Calcutta . . .	429	...	31·1	...	82·4
Chicago . . .	503	...	20·2	...	45·9
Christiania . .	120	34·5	18·8	15·7	41·5
Cincinnati . .	256	...	20·2	...	54·7
Constantinople .	819	...	...	...	56·5
Copenhagen . .	235	39·1	22·1	17·0	46·6
Dresden . . .	221	35·4	25·4	10·0	49·1
Dublin . . .	350	29·1	27·1	2·0	50·1
Edinburgh . .	229	32·2	20·2	12·0	47·1
Florence . . .	168	...	...	...	59·2
Frankfort . .	138	...	...	...	49·6
Geneva . . .	69	24·3	21·2	3·1	52·7
Genoa	179	...	...	...	61·1
Glasgow . . .	512	37·4	25·3	12·1	49·8
Hague . . .	118	39·7	23·3	16·4	...
Hamburg . .	454	37·5	24·5	13·0	48·0
Havanna . . .	230	25·4	45·7	...	79·1
Hull	155	36·4	23·8	12·6	...
Jerusalem . .	28	...	...	...	62·6
Leeds	310	36·8	21·6	15·2	...
Leicester . . .	123	38·4	21·8	16·6	...
Leipsic . . .	149	...	26·1	...	46·4

Digitized by Google

	Population (Thousands).	Per 1000 Inhabitants.			Mean Annual Temperature.
		Births.	Deaths.	Increase.	
Lima	130	...	...	...	73·3
Lisbon . . .	224	...	...	...	61·4
Liverpool . .	555	37·6	26·7	10·9	50·8
London . . .	3,832	34·7	21·2	13·5	50 8
Lyons	377	26·0	24·7	1·3	...
Madras . . .	398	39·0	38·8	0·2	81·9
Madrid . . .	396	37·5	37·4	0·1	58·2
Manchester . .	549	36·9	25·5	11·4	48·8
Manilla . . .	270	...	...	...	78·4
Marseilles . .	360	...	28·0	...	58·3
Melbourne . .	281	...	...	...	57·0
Mexico . . .	212	...	30·9	...	60·9
Milan	321	...	30·6	...	55·1
Montreal . . .	117	...	37·0	...	44·6
Moscow . . .	694	...	...	...	40·0
Munich	230	39·5	32·8	6·7	48·4
Naples . . .	491	32·0	33·1	...	60·3
Newcastle . .	145	36·8	21·8	15·0	...
New Orleans .	216	...	22·7	...	69·1
New York . .	1,243	34·6	26·2	8·4	51·8
Nottingham . .	187	36·7	22·4	14·3	...
Oldham . . .	115	35·4	22·8	12·6	...
Palermo . . .	245	...	28·5	...	63·1
Paris	2,269	30·5	28·6	1·9	51·3
Philadelphia .	868	30·0	20·5	9·5	52·1
Portsmouth . .	128	34·4	19·7	14·7	...
Quebec . . .	60	...	22·9	...	40·3
Quito	84	...	...	...	60·9
Rio Janeiro . .	275	35·5	39·4	...	77·2
Rome	301	27·2	26·8	0·4	60·5
Rotterdam . .	153	38·8	23·3	15·5	51·0
Rouen . . .	106	...	31·3	...	...
St. Louis . . .	351	30·0	19·3	10·7	55·0
St. Petersburg .	703	37·8	51·4	...	39·6
San Francisco .	234	...	18·1	...	55·2
Sheffield . . .	284	38·0	21·6	16·4	...
Stockholm . .	163	33·0	24·7	8·3	42·3
Sunderland . .	117	39·3	20·9	18·4	...
Sydney . . .	222	...	...	...	65·8
Tunis	210	...	...	...	68·8
Turin	241	31·5	25·6	5·9	53·1
Valparaiso . .	101	...	64·6	...	64·0
Venice . . .	142	30·2	22·7	7·5	55·4
Vienna . . .	731	39·2	29·0	...	51·0
Warsaw . . .	318	...	...	...	44·2
Washington . .	147	...	22·9	...	56·2

Digitized by Google

CIVIL SERVICE.—In the United Kingdom 29,000 persons, with an aggregate salary of £4,000,000, say £130 each.

CLEARING-HOUSE.

A.—Annual Business in 1881.

Place.	Millions £.	Per Inhab.	Per Day.
London . .	6,383	£1,680	£20,500,000
Paris . .	2,200	1,002	7,000,000
Berlin . .	989	930	3,200,000
Vienna . .	463	620	1,500,000
Manchester .	112	205	350,000
New York .	7,723	6,100	25,000,000
United States	12,873	250	42,000,000

B.—Increase of London Business.

Year.	Millions £.	Per Inhab.	Per Day.
1839 . .	980	£490	£3,200,000
1867-70 . .	3,540	1,200	12,000,000
1871-80 . .	5,210	1,500	17,000,000
1881 . .	6,383	1,680	20,500,000

C.—Increase of New York Business.

Year.	Millions £.	Per Inhab.	Per Day.
1853 . .	261	£510	£800,000
1863 . .	3,486	4,200	11,000,000
1873 . .	5,665	5,700	18,000,000
1881 . .	7,723	6,100	25,000,000

D.—Increase of Continental Clearing-Houses.

	Millions £.		Daily Average.	
	1873.	1881.	1873.	1881.
Paris .	881	2,200	£2,800,000	£7,000,000
Berlin .	1,070	989	3,400,000	3,200,000
Vienna	177	463	550,000	1,500,000
Total .	2,128	3,652	£6,750,000	£11,700,000

See *Cheques.*

CLOCKS.—The most remarkable have been :—

A.D.
760. One presented by Pope Paul I. to Pepin.
810. That sent to Charlemagne by Haroun-al-Raschid.
1292. That put up in Canterbury Cathedral.
1370. The famous clock of Strasburg.
1580. Musical clocks made in Germany.
1639. Galileo's, for astronomical uses.
1762. Harrison's chronometer, London.

Digitized by Google

COAL.

A.—Production in all Countries.

	Millions of Tons.		
	1842.	1860.	1880.
Great Britain . . .	35	85	147
France	4	8	19
Germany	11	14	59
Russia	...	1	7
Austria	1	3	16
Belgium	3	10	17
Europe	54	121	265
United States . . .	3	15	70
China	3	3	3
Australia, &c. . . .	1	2	6
The World . . .	61	141	344

B.—Consumption in all Countries.

	Million Tons.	Cwts. per Inhabitant.
Great Britain	130	74
United States	70	28
Germany	55	24
France	27	14
Austria	16	9
Belgium	12	44
Russia	9	2
Holland	3	14
Spain and Portugal . . .	2	2
Italy	3	2
Various	17	...
Total .	344	18

C.—Industry of Coal-Mining.

	Value of Output, 1880.	Number of Miners.	Tons Raised per Miner.	1871-80, Value at Pit's Mouth.
Great Britain . .	£47,000,000	485,000	303	£0 7 0
United States .	28,000,000	240,000	295	0 9 0
Germany . . .	13,700,000	220,000	270	0 5 0
France	11,200,000	102,000	190	0 11 0
Belgium . . .	6,100,000	101,000	168	0 7 8
Austria . . .	4,200,000	83,000	192	0 6 0
Total, . .	£110,200,000	1,231,000	269	£0 7 8

Digitized by Google

D.—Coal-fields of the World.

	Square miles.
Great Britain	9,000
France	1,800
Germany	3,600
Russia	27,000
Belgium, Spain, &c.,	1,400
Europe	42,800
United States	194,000
India	35,000
China	200,000
Total	471,800

E.—Coal Production in Great Britain.

Year.	Tons (thousands).	Cwts. per Inhab.	Year.	Tons (thousands).	Cwts. per Inhab.
1660	2,150	8	1846	36,400	27
1700	2,610	9	1853	54,000	38
1750	4,774	11	1860	84,000	58
1800	10,080	21	1870	110,000	72
1829	16,035	14	1880	147,000	82

F.—Production and Extent of Fields.

	Million Tons, 1880.	Content of Field, Million Tons.	Years of Supply.
South Wales	15	32,000	2,150
Midland	15	18,000	1,200
Northumberland	16	10,000	620
Stafford	15	6,000	400
Lancashire	22	5,000	230
Yorkshire, &c.	46	9,000	196
Scotland	18	10,000	550
Total	147	90,000	612

The Parliamentary report shows 90 milliards of tons, that is, enough for 600 years at our present rate of production, without going deeper than 4000 feet. The deepest coal-mine now working in Great Britain is the Rosebridge, 2500 feet. The Lambert colliery, in Belgium, is 3490 feet deep.

G.—Price of Coal in London since 1730.

Years.	Per Ton.	Years.	Per Ton.	Years.	Per Ton.
1730–50	£1 7 2	1820–30	£1 12 0	1851–60	£0 18 6
1751–99	1 14 9	1831–40	1 4 0	1861–70	0 18 5
1800–20	2 13 3	1841–50	0 19 0	1871–80	0 18 4

Digitized by Google

H.—Consumption of British Coal.

	Million Tons.
Factories	50
Domestic use	35
Railways and Steamers	17
Gas and Waterworks	16
Mines	10
Export	19
Total	147

I.—British Coal Consumed Abroad.

In—	Tons.	Lbs. per Inhab.
France	3,800,000	220
Germany	2,200,000	108
Russia	1,500,000	40
Italy	1,550,000	118
Spain	1,000,000	140
Sweden and Norway	1,400,000	470
Other parts	7,650,000	...
Total	19,100,000	...

K.—French Consumption of Coal.

	Annual Average.	
Years.	Tons (thousands).	Lbs. per Inhabitant.
1830–40	3,600	245
1860–65	17,500	1,110
1875–82	24,700	1,470

France consumes 19 million tons of native, and 8 million tons of imported coal. The French collieries in 1879 gave this result :—

	Amount.	Per ton.
Wages	£4,040,000	£0 4 8
Other expenses	3,320,000	0 3 11
Net profit	1,480,000	0 1 9
Value	£8,840,000	£0 10 4

L.—Harze's Table of Production.

	Tons (Thousands Omitted).		
Year.	Belgium.	France.	Germany.
1831	2,305	1,509	1,700
1841	4,028	3,410	3,341
1851	6,234	1,485	6,041
1861	10,057	9,423	15,080
1871	13,733	13,259	32,843
1880	16,867	19,362	52,048

This seems to omit the "brown coal" of Germany. See A.

Digitized by Google

M.—Gravity and Carbon.

	Weight, lbs. per cubic yd.	Per-centage Carbon.		Weight, lbs. per cubic yd.	Per-centage Carbon.
Rhode Island .	3,054	86	Newcastle . . .	2,160	87
Massachusetts .	2,882	97	Peat	2,160	57
Pennsylvania .	2,715	89	Marseilles . .	2,080	63
Mayenne (Fr.).	2,293	91	Greek	2,020	60
Swansea . . .	2,266	89	Westphalia . .	1,840	63
Lancashire . .	2,240	83	Wood	1,100	50

See *Coke.*

COAST TRAFFIC.—In the United Kingdom in 1880 the port entries for coast traffic amounted to 36 million tons, being an average of 32 voyages per annum for 12,580 vessels, with aggregate of 1,130,000 tons, engaged in this trade—average per vessel 90 tons.

In France the coast traffic is done by :—

	Mediterranean.	Other Ports.	Total.
Vessels . .	50,700	10,130	60,830
Tons . .	2,260,000	1,255,000	3,515,000
Average tons .	45	124	59

There is no return of the tonnage entries.

In Italy the coast traffic is double the amount of the entries from the high seas, and is rapidly increasing :—

	Tons.
1870	5,930,000
1879	8,343,000

This shows an increase of 40 per cent.

The United States show the following tonnage of American vessels engaged in coasting trade :—

	Tons.
1860	2,645,000
1870	2,638,000
1881	2,646,000

COBDEN TREATY, in 1860, reduced duty on French wines by one-half, the French reducing duties on coal and iron, and stipulating that no import duties in France were to exceed 25 per cent. *ad valorem.*

Digitized by Google

COCHINEAL.—Canary Islands exported in 1880 three million lbs., valued at £350,000. Great Britain imports three million lbs., against five million lbs. ten years ago.

COCOA.

Year.	Consumption in United Kingdom. Lbs.	Duty, per lb.	Price, per lb.	Consumption, oz. per Inhab.
1831 . .	440,000	6d.	9d.	¼
1841 . .	1,220.000	2d.	7d.	¾
1851 . .	5,310,000	2d.	5d.	3
1861 . .	4,520,000	1d.	6d.	2½
1871 . .	7,252,000	1d.	5½d.	4
1881 . .	10,885,000	1d.	8d.	5

COD.—The average take is as follows :—

	Million Fish.	Tons.	Value.
Great Britain . .	8	13,000	£200,000
France . . .	21	34,000	340,000
Norway . . .	65	110,000	1,050,000
Canada . . .	28	45,000	520,000
Total .	122	202,000	£2,110,000

The production of cod-liver oil averages 900,000 gallons yearly, chiefly in Norway and Canada, 100 livers yielding one gallon of oil. See *Fisheries.*

COFFEE.

A.—PRODUCTION.

	Tons (Thousands). 1855.	1880.	Value of Crop (1880), Millions £.
Brazil	163	333	22
Java	70	90	7
Ceylon	29	53	4
West Indies . . .	28	42	3
Africa	22	36	3
Manilla, &c. . . .	9	35	3
Total .	321	589	42

B.—INCREASE OF PRODUCTION.

Year.	Thousand Tons.	Year.	Thousand Tons.
1832 . . .	95	1865 . . .	422
1844 . . .	255	1875 . . .	505
1855 . . .	321	1881 . . .	589

Digitized by Google

C.—Consumption of Coffee.

	Thousand Tons.	Lbs. per Inhabitant.
United Kingdom	15	0·9
France	55	3·2
Germany	110	5·2
Russia	20	0·4
Austria	40	2·2
Italy	14	1·1
Belgium and Holland	50	11·2
Scandinavia	20	5·2
Europe	324	2·2
United States	165	7·2
Brazil	62	14·0
Colonies, &c.	38	2·0
Total	589	...

The coffee fields of Brazil cover 2 million acres, with 800 million trees—that is, 400 per acre, each tree averaging almost 1 lb. per annum, the industry employing 800,000 hands.

D.—Consumption in United Kingdom.

Year.	Millions lbs.	Oz. per Inhab.	Duty, per lb.	Price, per cwt.
1801	1	1	6d.	...
1811	6	5	7d.	95s.
1821	7	5	12d.	102s.
1831	22	14	6d.	65s.
1841	27	16	6d.	98s.
1851	30	18	6d.	82s.
1861	35	21	3d.	69s.
1871	30	15	3d.	63s.
1881	31	14	2d.	78s.

COIN.

A.—Age of British Gold Coin (1882).

Date minted.	Sovereigns.	Half-Sovereigns.
Before 1840	8 per cent.	1 per cent.
1840–1850	10 „	9 „
1851–1860	17 „	19 „
1861–1870	31 „	25 „
1871–1881	34 „	46 „
	100	100

On an average every £100 of gold coin in use in 1882 wanted half-a-sovereign to make weight, according to the bankers' census.

Digitized by Google

B.—Gold Coins of all Nations.

Country.	Name.	Weight, oz.	Fineness.	Value.
Austria . . .	Ducat . . .	0·112	986	£0 9 6
„	Crown . . .	0·357	900	1 7 8
Bolivia . . .	Doubloon . .	0·867	870	3 5 0
Brazil . . .	20-milrei . .	0·575	917	2 5 6
Chili	Condor . . .	0·492	900	1 18 2
Denmark . .	10-thaler . .	0·427	895	1 13 0
France . . .	20-francs . .	0·207	899	0 16 0
Germany . .	10-thaler . .	0·427	903	1 13 4
Great Britain .	Sovereign . .	0·257	916	1 0 0
Greece . . .	20-drachms .	0·185	900	0 14 4
Holland . . .	10-guilder . .	0·215	899	0 16 8
India . . .	Mohur . . .	0·374	916	1 9 6
Japan . . .	Cobang . . .	0·362	568	0 18 6
Persia . . .	Toman . . .	...	...	0 16 0
Russia . . .	5-rouble . . .	0·210	916	0 16 8
Spain . . .	Alfonso . . .	0·268	896	1 0 8
Sweden . . .	Ducat . . .	0·111	975	0 9 4
Turkey . . .	100-piastres .	0·231	915	0 18 2

C.—Silver Coins of all Nations.

Country.	Name.	Weight, oz.	Fineness.	Value.
Austria . . .	Florin . . .	0·397	900	£0 2 0
„	Dollar . . .	0·596	900	0 3 0
Bolivia . . .	Half-dollar. .	0·432	667	0 1 8
Brazil . . .	Milrei . . .	0·410	918	0 2 2
Chili	Dollar . . .	0·801	900	0 4 1
China . . .	Tael	...	...	0 6 0
Denmark . .	2-rigsdaler . .	0·927	877	0 4 7
France . . .	5-francs . . .	0·800	900	0 4 0
Germany . .	Thaler . . .	0·595	900	0 3 0
Great Britain .	Shilling . . .	0·182	925	0 1 0
Greece . . .	5-drachms . .	0·719	900	0 3 8
Holland . . .	2½-guilder . .	0·804	944	0 4 2
India . . .	Rupee . . .	0 374	916	0 1 10
Japan . . .	Itzebu . . .	0·279	890	0 1 5
Persia . . .	Kran	...	...	0 0 10
Russia . . .	Rouble . . .	0·667	875	0 3 4
Spain . . .	Peseta . . .	0·166	899	0 0 10
Sweden . . .	Rixdaler . .	1·092	750	0 4 8
Turkey . . .	20-piastres . .	0·770	830	0 3 7

Gold coin loses 1 per cent. of its weight in 50 years; silver coin 1 per cent. in 10 years.

Digitized by Google

D.—Actual Amount of Coin.

	Millions £.			Per Inhabitant.
	Gold.	Silver.	Total.	
United Kingdom	124	19	143	£4 1 0
France	191	110	301	8 0 6
Germany	70	45	115	2 12 0
Russia	22	12	34	0 7 0
Austria	10	10	20	0 11 0
Italy	15	10	25	0 17 0
Spain and Portugal	40	17	57	2 16 0
Holland and Belgium	16	25	41	4 9 0
Scandinavia	6	2	8	0 18 6
Switzerland	4	3	7	2 12 0
Turkey and Greece	3	2	5	0 10 0
Europe	501	255	756	2 8 0
United States	110	36	146	2 17 0
Spanish America	15	11	26	1 1 0
India	16	140	156	0 15 0
Japan	10	10	20	0 12 0
Australia	15	1	16	5 10 0
South Africa	5	1	6	5 15 0
Canada	1	1	2	0 9 0
The World	673	455	1,128	1 16 4

E.—Coin Minted from 1850 to December 1881.

	Millions £.			Per Head of medium Population.
	Gold.	Silver.	Total.	
United Kingdom	153	13	166	£5 7 0
France	299	45	344	9 11 0
Germany	89	56	145	3 13 0
Russia	115	20	135	1 15 0
Austria	14	38	52	1 10 0
Italy	10	20	30	1 4 0
Spain	17	10	27	1 16 0
Portugal	13	1	14	3 15 0
Belgium	23	18	41	8 2 0
Holland	6	30	36	10 3 0
Scandinavia	5	2	7	1 1 0
Europe	744	253	997	3 10 6
United States	213	46	259	3 9 0
Australia	63	...	63	35 2 0
India	2	196	198	1 2 0
The World	1,022	495	1,517	3 1 0

Digitized by Google

F.—Coin Minted in Great Britain since 1200.

Period.	Thousands.			Annual Average.
	Gold.	Silver.	Total.	
1200–1420 . .	£35	£183	£218	£990
1421–1509 . .	19	164	183	2,100
1510–1603 . .	1,475	5,485	6,960	74,800
1604–1688 . .	13,432	17,421	30,853	367,000
1689–1760 . .	26,058	8,239	34,297	444,000
1761–1820 . .	75,447	6,828	82,275	1,370,000
1821–1837 . .	47,315	3,338	50,653	3,170,000
1838–1880 . .	246,908	17,259	264,167	6,140,000

The last period ends with December 1880, and includes £57,352,000 gold minted in Australia.

G.—United States Mint.

Period.	Millions £.			Annual Average.
	Gold.	Silver.	Total.	
1793–1820 . .	1·3	2·2	3·5	0·1
1821–1840 . .	1·9	8·9	10·8	0·5
1841–1850 . .	19·8	4·5	24·3	2·4
1851–1860 . .	66 0	9·3	75·3	7·5
1861–1881 . .	147·2	37·1	184·3	8·8

H.—Quantity of Coin in the World since 1600.

Date (A D).	Millions £.		Ratio of Coin to Commerce.
	Coin.	Commerce.	
1600 . .	130	35	371
1700 . .	297	94	316
1809 . .	380	286	133
1830 . .	313	368	85
1880 . .	1128	2650	42

I.—Quantity of Coin in Great Britain since 1560.

Year.	Thousands.			Per Inhabitant.	Ratio to Commerce.
	Gold.	Silver.	Total.		
1560	£300	£800	£1,100	£0 4 6	41
1688	8,500	3,000	11,500	2 2 0	140
1711	12,000	4,000	16,000	2 15 0	107
1798	37,000	8,000	45,000	4 10 0	70
1844	51,000	10,000	61,000	2 5 6	45
1858	90,000	14,800	104,800	3 13 0	40
1872	107,600	17,000	124,600	3 19 0	23
1881	123,600	19,300	142,900	4 0 2	25

Digitized by Google

K.—Coin in France since 1784.

Year.	Millions £ Sterling.			Per Inhabitant.
	Gold.	Silver.	Total.	
1784	2	86	88	£3 12 0
1805	3	99	102	3 14 0
1840	4	111	115	3 7 0
1880	190	110	300	8 0 2

L.—Coin in United States since 1820.

Year.	Amount.	Per Inhabitant.
1820 . . .	£7,400,000	£1 5 0
1849 . . .	29,300,000	1 4 0
1854 . . .	50,900,000	1 16 0
1880 . . .	146,000,000	2 17 0

See *Gold, Silver, Mint, Money.*

M.—Old English Gold Coins.

Name.	Date.	Nominal Value.	In Present Money.
Noble . . .	1345	£0 6 8	£1 1 10
Angel . . .	1465	0 6 8	0 11 9
Crown . . .	1530	0 5 0	0 7 6
Sovereign . .	1551	1 10 0	1 8 0
Noble . . .	1600	0 15 0	0 16 0
Sovereign . .	1626	1 0 0	1 1 4

N.—Old French Coins.

Date.	Name.	Actual Value.	Date.	Name.	Actual Value.
1226	Angel . .	£0 11 3	1507	Porcupine .	£0 9 0
1258	Tournois .	0 0 9	1539	Salamander	0 9 0
1289	Esterlin . .	0 0 3	1550	Henri . .	0 9 5
1294	Royal . .	0 19 0	1575	Franc . .	0 2 3
1346	Couronne .	0 15 0	1640	Louis . .	0 16 8
1428	Mouton . .	0 5 6	1652	,, silver	0 4 8
1430	Royal . .	0 10 4	1655	Lily, gold .	0 10 6
1435	Ecu . . .	0 8 4	1656	,, silver.	0 1 5

O.—European Coins of 18th Century.

	Pence.		Pence.
French livre . .	10	Spanish ducat . .	40
Geneva ,, . . .	17	Genoese ,, . .	49
Hamburg mark . .	19	Venetian ,, . .	51
Austrian florin . .	21	Roman scudo . .	55

COKE.

	Yield from a Ton of Coal.		Yield from a Ton of Coal.
Westphalia . .	36 per cent.	Pennsylvania .	89 per cent.
Marseilles . .	41 ,,	Mayenne . . .	90 ,,
Lancashire . .	58 ,,	Wales	91 ,,

Digitized by Google

COLD.—The greatest degrees of cold recorded in England were 16 below zero at London on Christmas Day, 1796, and 20 below zero at Torquay on Christmas Day, 1860. See *Meteorology.*

COLONIES, BRITISH.—Their growth in 20 years has been as follows:—

A.—POPULATION AND COMMERCE.

	Population (Thousands).		Commerce (Thousands £).		Ratio of Increase.	
	1860.	1880.	1860.	1880.	Pop.	Commerce.
					Per cent.	Per cent.
Australia . .	1,358	2,866	49,950	88,610	112	78
Canada . . .	3,294	4,270	22,712	35,108	30	54
South Africa .	389	1,368	5,041	21,112	251	320
West Africa .	210	524	882	3,130	148	245
Mauritius . .	310	357	5,029	5,640	16	12
Ceylon . . .	1,919	2,558	6,102	9,980	33	63
Straits Setts. .	282	308	14,480	29,685	10	105
West Indies .	1,075	1,365	11,169	16,460	27	48
Various . . .	192	438	5,628	41,870	132	646
Cyprus . . .	...	220	...	410	...	...
Colonies . .	9,029	14,274	120,993	252,005	58	109
India. . . .	143,271	214,600	69,510	109,820	49	57
Total .	152,300	228,874	190,503	361,825	50	90

B.—REVENUE AND DEBT.

	Revenue (Thousands £).		Debts (Thousands £).		Ratio of Increase.	
	1860.	1880.	1860.	1880.	Revenue.	Debt.
					Per cent.	Per cent.
Australia . .	5,760	19,315	10,679	94,312	233	781
Canada . . .	2,065	5,310	14,232	36,800	158	157
South Africa .	822	3,770	418	13,870	310	3,350
West Africa .	55	251	...	104	360	...
Mauritius . .	553	764	...	800	36	...
Ceylon . . .	767	1,383	100	671	80	571
West Indies .	920	1,880	1,496	1,450	105	...
Cyprus . . .	...	165	...	...	...	...
Various . . .	333	923	110	540	180	390
Colonies . .	11,275	33,761	27,035	148,567	200	448
India. . . .	39,706	67,615	98,107	153,610	70	56
Total .	50,981	101,376	125,142	302,177	99	142

Digitized by Google

C.—Ratios per Inhabitant in 1880.

	Commerce.	Revenue.	Debt.	Railway Capital.
Australia . .	£30	£6 16 0	£32	£20
Canada . .	8	1 5 0	8	18
South Africa . .	16	2 15 0	10	6
West Africa . .	6	0 10 0	...	...
Mauritius . .	16	1 9 0	2	2
Ceylon . . .	4	0 11 0	...	1
West Indies . .	12	1 7 0	1	1
Cyprus . . .	2	0 15 0	...	...
India . . .	½	0 6 2	⅔	⅔

COLOUR-BLIND.—In the schools of the United States 4 per cent. of male children were found colour-blind, and less than 1 per cent. of female. It is stated that similar results have been shown in Europe.

COMETS.

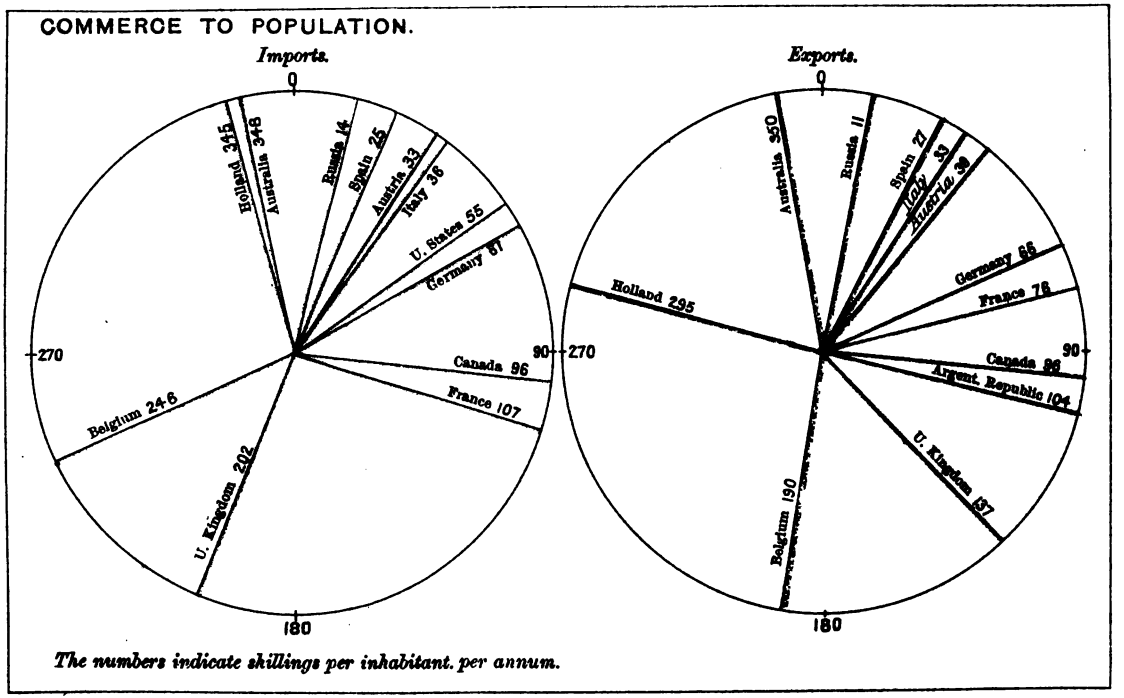
Name.	Years of Revolution.	Millions of Miles from Sun.		Next Return.
		Greatest Distance.	Least Distance.	
Halley . . .	77	3,200	56	1910
Mechain . . .	14	...	...	1885
Faye . . .	8	603	192	1888
D'Arrest . . .	7	...	...	1883
Biela . . .	7	585	82	1886
Brorsen . . .	6	537	64	1884
Winnecke . .	6	...	...	1885
De Vico . . .	6	475	110	1883
Encke . . .	3	387	32	1884

COMMERCE.

A.—Ratio of Commerce per Inhabitant.

	1830.	1850.	1870.	1880.
United Kingdom .	£3 12 0	£6 1 0	£14 16 0	£16 6 0
France	1 2 0	2 3 0	6 4 0	9 0 6
Germany	1 4 0	3 3 0	5 6 0	7 1 0
Russia	0 8 6	0 11 0	1 7 0	1 10 0
Austria	0 13 0	0 19 0	2 7 0	3 7 6
Italy	0 13 6	1 6 0	3 1 0	3 6 6
Spain and Portugal	0 14 8	1 3 0	2 2 0	2 13 0
Holland	5 14 0	14 16 0	19 8 0	30 2 0
Belgium	3 18 0	8 3 0	12 12 0	21 1 0
Scandinavia . . .	1 12 0	2 17 0	5 15 0	6 10 6
Europe	1 4 8	2 2 6	4 18 2	6 9 6
United States . .	2 0 0	2 13 4	4 9 3	6 1 0

Digitized by Google


COMMERCE TO POPULATION.
Imports.
0
90
180
270
Holland 345
Australia 348
Russia 14
Spain 25
Austria 33
Italy 36
U. States 55
Germany 67
Canada 96
France 107
Belgium 246
U. Kingdom 202
Exports.
0
90
180
270
Australia 350
Russia 11
Spain 27
Italy 33
Austria 39
Germany 66
France 78
Canada 96
Argent. Republic 104
U. Kingdom 137
Belgium 190
Holland 295
The numbers indicate shillings per inhabitant. per annum.

Digitized by Google

B.—Aggregate of Net Imports and Exports.

	Millions £.					
	1880.	1840.	1850.	1860.	1870.	1880.
United Kingdom .	88	113	169	318	459	571
France . . .	37	66	75	167	227	339
Germany . . .	33	56	105	160	212	315
Russia . . .	20	25	32	46	100	121
Austria . . .	16	22	29	51	83	128
Italy . . .	11	17	26	46	74	96
Spain and Portugal .	11	14	20	30	41	54
Holland . . .	16	27	44	56	71	121
Belgium . . .	14	20	35	48	64	116
Scandinavia . .	8	12	17	30	42	55
Europe . . .	254	372	552	952	1,373	1,916
United States . .	25	43	64	137	172	309
South America .	14	22	38	62	85	101
British Colonies .	29	62	93	190	241	362
The World . .	322	499	747	1,341	1,871	2,688

C.—Aliquot Parts of Commerce since 1830.

	1880.	1840.	1850.	1860.	1870.	1880.
United Kingdom .	27·3	22·7	22·5	23·8	24·5	21·2
France . . .	11·5	13·3	10·1	12·5	12·2	12·6
Germany . . .	10·3	11·2	14·0	11·9	11·5	11·7
Russia . . .	6·2	5·0	4·4	3·4	5·3	4·5
Austria . . .	5·0	4·4	3·9	3·8	4·4	4·7
Italy . . .	3·4	3·4	3·5	3·4	3·9	3·6
Spain and Portugal .	3·4	2·8	2·7	2·2	2·2	2·0
Holland . . .	5·0	5·4	5·9	4·2	3·7	4·5
Belgium . . .	4·3	4·0	4·7	3·6	3·4	4·4
Scandinavia . .	2·5	2·4	2·3	2·2	2·3	2·1
Europe . .	78·9	74·6	74·0	71·0	73·4	71·3
United States . .	7·8	8·6	8·5	10·2	9·2	11·5
South America .	4·3	4·4	5·1	4·6	4·5	3·7
British Colonies .	9·0	12·4	12·4	14·2	12·9	13·5
The World . .	100·0	100·0	100·0	100·0	100·0	100·0

D.—Articles of Bulk Exchanged since 1860.

	Millions per Annum.				Millions per Annum.		
	1861–70.	1871–80.	1880.		1861–70.	1871–80.	1880.
Coal, tons .	14·3	22·4	30·6	Grain, tons .	4·4	10·1	10·5
Iron, „ .	1·9	3·6	4·7	Cotton, cwts.	9·8	19·8	23·2
Meat, cwts. .	2·4	7·6	13·2	Wool, „	2·4	5·0	5·9

Digitized by Google

E.—Commerce of Decade ending December 1880.

	Millions £.			Annual Ratio to Medium Population.
	Imports.	Exports.	Total.	
United Kingdom	3,714	2,778	6,492	£19 12 0
France	1,568	1,394	2,962	8 1 0
Germany	1,740	1,270	3,010	7 2 6
Russia	490	480	970	1 4 0
Austria	570	505	1,075	3 2 0
Italy	472	444	916	3 7 0
Spain and Portugal	253	242	495	2 9 6
Belgium	562	441	1,003	19 3 0
Holland	630	432	1,062	27 5 0
Scandinavia	348	262	610	7 12 0
Greece, Turkey, &c.	174	159	333	3 5 0
Europe	10,521	8,407	18,928	6 6 0
United States	988	1,122	2,110	4 14 0
Canada	179	151	330	8 2 0
South America	587	658	1,245	4 16 0
Australia	402	343	745	30 1 0
China and Japan	289	271	560	...
Java	91	165	256	1 6 0
India	368	597	965	0 9 0
Egypt	52	136	188	3 15 0
Various	318	311	629	...
The World	13,795	12,161	25,956	...

F.—Growth of British Commerce.

Year.	Reign.	Thousands £.			Commerce per Inhabitant.
		Imports.	Exports.	Total.	
1355	Edward III.	39	294	333	£0 2 10
1573	Elizabeth	1,650	1,880	3,530	0 15 0
1614	James I.	2,141	2,091	4,232	0 16 6
1687	James II.	4,200	4,087	8,287	1 10 2
1714	Anne	6,850	8,008	14,858	2 15 0
1761	George III.	10,292	16,039	26,331	4 1 3
1801	,,	31,420	36,930	68,350	4 6 6
1835	William IV.	48,912	47,021	95,933	3 15 4
1855	Victoria	133,720	115,822	249,542	8 18 8
1880	,,	347,876	223,060	570,936	16 6 0

The returns before 1800 are for England only, after that date for the United Kingdom.

Digitized by Google

G.—Balance of British Trade.

	Millions £ Sterling.					
	Imports from		Exports to		Surplus Imports.	Surplus Exports.
	1861-70.	1871-80.	1861-70.	1871-80.		
France	298	421	230	283	206	...
Germany	162	217	261	334	...	216
Russia	169	200	69	101	199	...
Austria	10	12	13	14	...	5
Italy	33	39	41	74	...	43
Spain	54	94	33	43	72	...
Portugal	23	37	22	27	11	...
Belgium	71	131	68	128	6	...
Holland	110	175	145	193	...	53
Denmark	20	40	14	23	23	...
Sweden and Norway	56	97	22	53	78	...
Greece	11	18	8	10	11	...
Roumania	8	9	4	9	4	...
Turkey	54	57	67	70	...	26
Europe	1,079	1,547	997	1,362	267	...
United States	360	773	233	299	601	...
Brazil	59	63	55	68	...	1
River Plate	23	26	29	39	...	19
Chili	33	39	18	21	33	...
Peru	35	45	13	17	50	...
Central America	19	24	25	30	...	12
Mexico	11	5	13	10	...	7
Spanish Colonies	60	51	33	37	41	...
Portuguese „	4	3	2	2	3	...
Java	1	14	10	15	...	10
China and Japan	113	132	54	78	113	...
Egypt	158	114	60	40	172	...
Various	42	54	63	48	...	15
Foreign countries	1,997	2,890	1,605	2,066	1,216	...
India	345	299	197	241	206	...
Australia	103	201	128	188	...	12
Canada	75	108	60	87	36	...
West Indies	69	67	32	32	72	...
Singapore	21	29	16	23	11	...
Ceylon	33	36	8	10	51	...
South Africa	23	42	18	49	...	2
Hong Kong	7	11	21	35	...	38
Various	28	31	44	47	...	32
Total colonies	704	824	524	712	292	...
Grand total	2,701	3,714	2,129	2,778	1,508	...

Digitized by Google

H.—Balance of United States Trade (1871–81).

	Millions £ Sterling.			
	Imports from.	Exports to.	Surplus Imports.	Surplus Exports.
Great Britain .	329	735	...	406
France	104	112	...	8
Germany . . .	86	114	...	28
Cuba	145	29	116	...
Brazil	84	15	69	...
Various. . . .	273	213	60	...
Total.	1,021	1,218	...	197

I.—Balance of French Trade (1871–80).

	Millions £ Sterling.			
	Imports from.	Exports to.	Surplus Imports.	Surplus Exports.
Great Britain .	283	421	...	138
Germany . . .	141	151	...	10
Belgium . . .	173	184	...	11
United States .	140	109	31	...
Italy	146	79	67	...
Russia	90	14	76	...
Spain	59	53	6	...
Various. . . .	528	379	19	...
Total. . . .	1,560	1,390	170	...

K.—Components of British Commerce.

	Imports, Millions £.		Value per Inhabitant.	
	1870.	1880.	1870.	1880.
Grain. . .	36·7	69·5	£1 3 4	£2 1 0
Cotton . .	53·5	42·8	1 13 6	1 5 0
Manufactures .	26·5	33·7	0 16 3	0 19 6
Meat . . .	7·7	26·5	0 5 0	0 15 0
Wool . . .	15·8	26·4	0 10 0	0 15 0
Sugar. . .	17·6	23 0	0 11 6	0 13 6
Dairy produce .	11·9	21·2	0 7 8	0 12 8
Tea, coffee . .	15·4	19·3	0 9 9	0 11 4
Timber . .	13·2	16·8	0 8 4	0 9 8
Minerals . .	8·9	15·5	0 5 9	0 9 0
Flax, &c. . .	10 4	10·1	0 6 8	0 6 0
Sundries . .	85·4	106·2	2 15 0	3 2 0
Total imports .	303·0	411·0	9 13 2	11 19 8

Digitized by Google

COMPONENTS OF BRITISH COMMERCE—*continued.*

	EXPORTS, MILLIONS £.		VALUE PER INHABITANT.	
	1870.	1880.	1870.	1880.
Cotton goods . .	71·4	75·6	£2 5 0	£2 4 0
Iron . . .	26·5	29·7	0 17 0	0 19 0
Woollens . .	26·6	20·6	0 17 0	0 12 0
Hardware . .	16·4	19·5	0 10 6	0 11 0
Linen, jute . .	10·4	9·3	0 6 8	0 5 6
Coal . . .	5·6	8·4	0 3 6	0 5 0
Sundries . .	42·7	60·0	1 7 0	1 15 6
British . .	199·6	223·1	6 6 8	6 12 0
Goods in transit .	45·5	64·0	1 9 4	1 15 0
Total exports .	245·1	287·1	7 16 0	8 7 0

See *Imports, Exports,* &c.

L.—COMMERCE OF FRANCE.

Year.	MILLIONS £.			Per Inhabitant (Shillings).
	Imports.	Exports.	Total.	
1716 . . .	4	5	9	9
1750 . . .	13	14	27	21
1788 . . .	17	17	34	27
1801 . . .	17	12	29	21
1810 . . .	13	15	28	20
1820 . . .	15	18	33	22
1830 . . .	18	19	37	23
1840 . . .	32	34	66	38
1850 . . .	32	43	75	42
1860 . . .	76	91	167	89
1870 . . .	115	112	227	124
1882 . . .	199	144	343	181

M.—COMMERCE BETWEEN FRANCE AND UNITED KINGDOM.

Period.	MILLIONS £.				Ratio with United Kingdom.
	Imports from United Kingdom.	Exports to United Kingdom.	Total Exchanged.	Trade of France.	
					Per cent.
1831–40 .	16	30	46	563	12
1841–50 .	31	55	86	735	12
1851–60 .	84	163	247	1,270	20
1861–70 .	230	298	528	2,070	25
1871–80 .	284	421	705	2,962	24
1881 .	30	40	70	342	21
51 years .	675	1,007	1,682	7,942	21

Digitized by Google

N.—Distribution of British Commerce.

With—	Millions £.			Aliquot Parts.		
	1860.	1870.	1880.	1860.	1870.	1880.
Colonies . .	89	120	174	23·7	21·9	24·9
United States .	68	81	145	18·1	14·8	20·7
France . . .	31	60	71	8·2	11·0	10·1
Germany . .	34	43	53	9·0	7·8	7·6
Holland . .	18	31	42	4·8	5·6	6·0
Russia . . .	22	31	27	6·0	5·6	3·9
Belgium . .	8	20	24	2·2	3·6	3·5
Scandinavia . .	9	17	24	2·4	3·1	3·5
Spanish-America .	13	26	22	3·4	4·7	3·2
Spain and Portugal	11	14	21	3·0	2·5	3·0
Brazil . . .	7	12	12	1·9	2·2	1·7
Egypt . . .	13	23	12	3·4	4·2	1·7
Turkey . . .	11	14	11	3·0	2·5	1·6
Italy . . .	7	10	10	1·9	1·8	1·4
Various . . .	34	46	50	9·0	8·7	7·2
The World . .	375	548	698	100·0	100 0	100·0

The above includes not only imports and exports, but also goods in transit.

O.—Commerce of United States.

Year.	Millions £ Sterling.		British Ratio.	Trade, per Inhabitant (Shillings).	
	Total.	With Great Britain.		Total.	With Great Britain.
			Per cent.		
1790 . .	9	5	55	45	25
1800 . .	25	15	60	94	57
1810 . .	26	16	62	72	44
1820 . .	26	15	57	54	31
1830 . .	25	14	56	39	22
1840 . .	44	23	53	54	29
1850 . .	64	32	50	54	27
1860 . .	137	68	50	88	44
1870 . .	172	81	47	89	42
1880 . .	309	145	47	121	58

The above is exclusive of bullion.

Digitized by Google

P.—Components of United States Commerce.

	Imports, Millions £.			Exports, Millions £.	
	1871.	1881.		1871.	1881.
Sugar	15	19	Cotton	42	52
Iron	9	10	Wheat	14	44
Coffee	6	12	Maize, &c.	2	12
Woollens	9	6	Meat	5	25
Cottons	6	6	Cattle	0	3
Silks	6	7	Petroleum	7	8
Linens	3	3	Cheese, &c.	2	5
Hides	3	6	Tobacco	4	4
Tea	3	4	Timber	2	4
Wool	2	2	Machinery	1	2
Sundries	39	58	Sundries	13	25
Total	101	133	Total	92	184

COMPANIES, JOINT-STOCK.

A.—New Companies in 1881.

	Millions £.		New Capital per Inhab.
	Projected.	Established.	
Great Britain	168	66	£1 18 0
France	160	94	2 11 0
Germany	70	50	1 2 0
Austria	40	28	0 15 0
Total	438	238	£1 12 0

B.—Registered in Great Britain since 1862.

Years.	Number.	Capital, Millions £.	New Capital, Per Annum, Millions £.	Average Capital per Company.
1862–70	6,179	1,010	112	£163,000
1871–80	10,443	930	93	90,000
1881	1,385	168	168	121,000
1882	1,471	217	217	148,000

Digitized by Google

C.—Capital of New Companies (Great Britain).

Years.	Millions £. Still-born.	Established.	Total.
1862–80	1,080	860	1,940
1881	102	66	168
1882	159	58	217
Total	1,341	984	2,325

D.—Companies Established (Great Britain).

	Millions £. 1881.	1882.
Railways	23	22
Electricity	3	12
Lands	4	6
Mining	6	3
Banks	4	2
Sundry	26	13
Total	66	58

E.—Companies Established in all Nations.

Years.	Millions £. Amount, Capital.	Annual Average.
1871–74	1,230	308
1875–78	420	105
1879–82	820	205
Total	2,470	206

F.—French Companies in 1881.

	Millions £.
Banks	33
Railways	8
Newspapers	3
Real estate	14
Mining	4
Various	32
Total	94

COMPENSATION. — The railway companies of Great Britain pay £1300 a day for injuries done, through their culpable neglect, to passengers or merchandise.

CONSCIENCE-MONEY.—Between the years 1870 and 1880 the average received by the Chancellor of the Exchequer, for unpaid taxes, was £9100 per annum.

Digitized by Google

CONSOLS.

A.—Quotations of National Debt since 1740.

Period.	Maximum.	Minimum.	Average.	Debt, Millions £.
1740–60 . .	104	82	93·5	78
1761–80 . .	91	61	82·1	139
1781–1800 . .	97	47	67 2	240
1801–20 . .	84	50	64·9	841
1821–40 . .	97	69	85·8	781
1841–60 . .	102	79	93·4	786
1861–81 . .	103	84	93·1	776

B.—Holders of Funds.

Average.	1830.	1848.	1880.
£100,000 . . .	172	177	283
50,000 . . .	1,810	1,550	1,892
10,000 . . .	22,189	20,561	19,140
3,000 . . .	124,014	120,487	112,077
500 . . .	132,960	141,352	103,122
Total . .	281,145	284,127	236,514

Unclaimed dividends in March 1882 amounted to £3,027,000. For French funds, see *Rentes*.

CONSUMPTION.—In England and Wales 14 per cent. of males, and 13½ per cent. of females, die of consumption. In 1880 in the United States the deaths from consumption were 92,210, or 13 per cent. of all recorded.

CONVEYANCES.—London cabs carry 30 million, Paris cabs 18 million passengers yearly; the first earn £2,200,000, the second, £1,080,000 per annum. The London Omnibus Co. has 1620 busses, carries 54 million passengers yearly, for £550,000. The Paris local traffic is as follows:—

	Million Passengers.	Receipts.	Per Passenger, Pence.
Tramways . .	119	£740,000	1·5
Omnibus . . .	90	690,000	1·9
Steamboats, &c. . .	25	175,000	1·7
Total . . .	234	£1,605,000	1·6

The Paris local traffic was 72 millions in 1860, rising to 108 millions in 1870, and 234 millions in 1880.

The tramways of the United Kingdom carried 206 million passengers in 1880, averaging 2d. each. See *Tramways, Railways, Passengers, Cabs.*

Digitized by Google

CONVICTS.—See *Crime, Prisons.*

COOLIES.—The emigration from India averages 22,000 yearly, the number registered abroad in 1880 being 335,000, viz. :—

Mauritius .	141,000	Bourbon . .	43,000	Natal . .	18,000
Demerara .	54,000	Trinidad . .	26,000	Jamaica, &c.	53,000

Numbers of Chinese coolies emigrate to Cuba and Peru, where they are ill-treated. Cuba imported 116,000 in the years 1866–73, and refused to let them return to China on the expiration of their contracts; 67,000 died. The number imported into Peru in the year 1871 was 38,650, of whom many were put to death. In 1880, in one province 2000 were massacred.

CO-OPERATIVE SOCIETIES.

A.—GREAT BRITAIN.

Year.	Societies.	Thousand Members.	Capital, Thousands £.	Sales, Millions £.
1861 . . .	66	38	365	1·1
1871 . . .	749	249	2,530	8·2
1881 . . .	1,118	1,083	6,850	24·4

B.—BALANCE-SHEET OF FIVE PRINCIPAL SOCIETIES.

Purchases . .	£3,973,000	Rent, gas, &c. . .	£23,000
Wages . . .	237,000	Net profit . . .	40,000
Sales . . .	£4,273,000		

C.—GERMAN, SCHULTZ-DELITSCH, SOCIETIES.

Years.	Societies.	Thousand Members.	Reserve, Thousands £.
1860	133	32	80
1870	740	315	2,200
1880	3,123	1,108	8,480

The first society was established at Rochdale, Lancashire, in 1844, by 28 workmen, with a capital of £28. The shares of some of the London societies are now worth 105 times the amount paid on subscription. The Schultz-Delitsch societies in Germany have an effective capital of 18½ millions sterling, and their turn-over for 1880 was 140 millions sterling.

Digitized by Google

COPPER.

A.—Production.

	Fine Copper, Tons.			
	1850.	1860.	1870.	1880.
Great Britain	11,800	13,540	7,220	3,440
France	2,300	2,500	4,900	5,100
Germany	1,650	3,200	6,850	10,140
Russia	6,000	5,500	5,500	6,100
Spain	200	300	1,100	21,300
Sweden	2,300	2,200	2,000	1,600
Austria, &c.	1,600	1,900	2,000	2,200
Europe	25,850	29,140	29,570	49,880
United States	2,700	5,530	12,650	20,260
Chili	14,300	25,100	30,200	36,800
Australia	2,400	7,600	9,700	13,100
Total	45,250	67,370	82,120	120,040

The production increases rapidly in the United States, the yield for 1881 being 34,200 tons fine copper, valued at £2,200,000. The above table does not include Japan, which produces 3000 tons yearly, all being retained for home consumption. The ratio of copper to copper ore is as follows:—

	Per cent. of Pure Copper.		Per cent. of Pure Copper.
Germany	3	England	7
Austria	4	Australia	12
France	5	United States	18

Ores vary from 50 to 80 shillings per ton, and refined copper averages £70 a ton.

B.—British Copper Trade.

Year.	Tons, Thousands.		Value, Thousands.		Fine Copper, per Ton.
	Imported.	Exported.	Imports.	Exports.	
1850	51	11	£1,412	£1,080	£102
1851–60	78	26	2,254	2,531	98
1860	109	31	3,404	3,153	107
1861–70	133	46	4,016	3,844	89
1870	137	52	4,039	3,772	76
1871–80	147	56	5,151	4,413	78
1881	182	65	4,593	4,284	68

The imports include, besides copper, a quantity of "regulus," or half-smelted ore.

Digitized by Google

C.—British Copper Mines.

Annual Yield of Copper, and Value.

Period.	Tons.	Value.	Period.	Tons.	Value.
1725–45	560	£84,000	1801–20	5,880	£720,000
1746–65	1,030	160,000	1821–40	13,220	1,360,000
1766–85	2,020	290,000	1841–60	12,840	1,355,000
1786–1800	2,710	430,000	1861–80	8,070	686,000

CORONERS' INQUESTS.—Average, 5 per cent. on the number of deaths yearly in England and Wales:—

A.—Returns for 1879–1881.

	1879.	1880.	1881.
Suicide	1,941	1,930	1,918
Murder	302	309	356
Drink	418	447	...
Hunger	312	286	...
Accidents	13,850	13,676	11,404
Natural deaths	10,233	9,940	...
Total	27,056	26,588	27,466

B.—Analysis of 1879.

	Males.	Females.	Total.
Executed	13	4	17
Murder	75	78	153
Homicide	97	52	149
Drink	241	177	418
Hunger	188	124	312
Suicide	1,461	480	1,941
Accidentally drowned	2,785	905	3,690
Killed by cabs	225	130	355
„ by railways	1,120	15	1,135
„ in mines	1,037	...	1,037
Sundry accidents	4,941	2,675	7,616
Natural deaths	6,050	4,183	10,233
Total	18,233	8,823	27,056

Inquests cost on an average 64 shillings each. See *Deaths* (violent).

CORPULENCE.

Name.	Weight, Lbs.	Age.	Residence.
James Mansfield	476	82	Debden, Mon.
Mr. Bright	596	29	Maldon, Ess.
Dan. Lambert	739	40	Stamford, Lin.

Digitized by Google

COTTAGES.—To pay 6 per cent. on cost:—

Rooms.	Cost.	Rent, Shillings per Week.
3	£120	3
5	160	4
6	200	5

The Peabody buildings are rented at 2 shillings per room weekly, but the cost of site in London is considerable. The Société Montmartre in Paris has also built workmen's tenements, averaging 9 shillings a week, or double the Peabody average. See *Dwellings.*

COTTON.

A.—PRODUCTION IN MILLIONS LBS.

	1830.	1840.	1860.	1870.	1880.
United States .	350	880	1,870	1,540	3,161
India . .	194	212	420	625	540
Egypt . .	18	30	61	240	282
Various . .	74	70	40	69	56
Total . .	636	1,192	2,391	2,474	4,039

B.—CONSUMPTION IN MILLIONS LBS.

	1830.	1840.	1860.	1870.	1880.
Great Britain .	250	454	1,140	1,101	1,404
United States .	52	135	410	530	961
Germany . .	56	120	220	260	390
France . .	87	110	215	250	340
Various . .	162	231	286	239	649
Total . .	607	1,050	2,271	2,380	3,744

C.—COTTON MANUFACTURES.

	Million Spindles.	Million Lbs. Cotton.	Operatives, Thousands.	Cotton, Lbs. per Operative.	Manufactures, Millions £.
Great Britain .	40·2	1,404	482	2,940	95
United States .	11·2	911	260	3,510	74
Germany . . .	5·4	390	150	2,600	24
France . . .	4·8	340	200	1,700	20
Russia . . .	3·4	140	180	780	18
Austria . . .	2·2	150	100	1,500	13
Spain	1·6	100	80	1,250	9
India	1·2	80	80	1,000	8
Italy	1·0	90	50	1,800	8
Belgium and Holland .	1·1	56	36	1,550	6
Switzerland, &c.	2·2	73	55	1,360	7
Total . . .	74·3	3,744	1,673	2,240	282

Digitized by Google

D.—British Cotton Industry.

Year.	Millions.			Value, Millions £.		
	Consumed, Raw Cotton. Lbs.	Produced, Cloth, Yards.	Exported, Yarn, Lbs.	Raw Cotton.	All Product.	Net.
1820 .	119	425	23	7	27	20
1821–30	181	620	39	6	28	22
1830 .	245	795	64	7	32	25
1831–40	336	1,065	90	11	34	23
1840 .	452	1,445	118	11	38	25
1841–50	521	1,666	136	11	38	25
1850 .	588	2,025	124	17	42	25
1851–60 .	852	2,980	171	24	58	34
1860 .	1,140	4,150	197	31	79	48
1861–70	793	2,890	136	43	76	33
1870 .	1,101	4,025	186	46	93	47
1871–80	1,270	4,602	222	39	94	55
1881 .	1,471	5,345	255	39	95	56

E.—Production of Cotton Cloth (Great Britain).

Year.	Million Yards.			Value, Millions £.	Pence per Yard.
	Made.	Exported.	Home Use.		
1820 . .	425	249	176	22	12·4
1821–30 .	620	340	280	23	8·9
1830 . .	795	445	350	26	7·8
1831–40 .	1,065	589	476	27	6·1
1840 . .	1,445	791	654	28	4·6
1841–50 .	1,666	965	701	28	4·0
1850 . .	2,025	1,348	677	33	3·9
1851–60 .	2,980	1,988	992	46	3·7
1860 . .	4,150	2,765	1,385	63	3·7
1861–70 .	2,890	2,444	446	59	4·9
1870 . .	4,025	3,267	758	71	4·2
1871–80 .	4,602	3,693	909	73	3·8
1881 . .	5,345	4,777	568	75	3·3

F.—Results of British Cotton Manufactures.

	Value in Millions £.			Ratio of Result, per Cent.
	Raw Cotton.	Manufactures.	Net Result.	
1821–40 . . .	170	620	450	72
1841–60 . . .	350	960	610	63
1861–70 . . .	430	760	330	44
1871–81 . . .	429	1,035	606	58
Total, 61 years	1,379	3,375	1,996	59

Digitized by Google

G.—Export of British Cotton Goods.

Year.	Millions.		Value, Thousands.	Exports per Inhabitant.		
	Yards, Cloth.	Lbs. Yarn.		Yards, Cloth.	Lbs. Yarn.	Value, Shillings.
1820 .	249	23	£16,480	12	1	17
1821–30	340	39	17,210	15	2	15
1830 .	445	65	19,420	19	3	16
1831–40	589	90	21,390	23	4	16
1840 .	791	118	24,730	29	5	18
1841–50	965	137	24,215	35	5	17
1850 .	1,348	131	28,280	50	5	21
1851–60	1,988	171	38,030	70	6	27
1860 .	2,765	197	52,010	95	7	36
1861–70	2,444	136	59,620	81	4	40
1870 .	3,267	186	71,415	105	6	47
1871–80	3,693	222	71,930	110	7	43
1881 .	4,777	255	79,090	135	8	45

H.—Plain and Printed Exports (British).

Year.	Million Yards.		Value, Thousands.		Per Yard, Pence.	
	Plain.	Printed.	Plain.	Printed.	Plain.	Printed.
1820 .	114	135	£5,510	£7,705	11·6	13·7
1821–30	172	168	5,890	7,220	8·2	10·3
1830 .	245	200	6,625	7,590	6·5	9·1
1831–40	314	275	6,812	7,516	5·2	6·5
1840 .	433	358	7,830	8,492	3·6	5·6
1841–50	584	381	8,340	7,710	3·4	4·9
1850 .	758	590	9,597	12,277	3·0	5·0
1851–60	1,252	736	15,330	14,790	2·9	4·8
1860 .	1,790	975	22,954	19,188	3·1	4·7
1861–70	1,606	838	28,110	20,040	4·2	5·7
1870 .	2,294	973	33,922	22,823	3·5	5·6
1871–80	2,592	1,101	32,740	25,320	3·0	5·5
1881 .	3,361	1,416	37,170	28,755	2·6	4·0

I.—Ratio of Plain and Printed Exports.

	Quantity.			Value.		
	Plain.	Printed.	Total.	Plain.	Printed.	Total.
1821–40 .	52	48	100	46	54	100
1841–60 .	61	39	100	51	49	100
1861–70 .	66	34	100	58	42	100
1871–81 .	70	30	100	57	43	100

Digitized by Google

K.—Consumers of British Cotton Goods (1880).

	Million Yards.	Million Lbs. Yarn.	Total Value (Thousands omitted).	Ratio.
India . . .	1,812	48	£20,010	28·8
China and Japan.	508	47	8,135	11·6
Turkey and Egypt	528	12	7,680	11·0
South America .	491	...	6,740	9·7
Europe . .	313	94	10,330	14·9
West Indies .	122	...	1,810	2·6
United States .	78	...	1,750	2·5
Various . .	644	15	13,130	18·9
Total . .	4,496	216	£69,585	100·0

L.—Production of Cotton Yarn, Great Britain.

Year.	Million Lbs.		Ratio Exported, per Cent.	Spun Yarn, Value (Thousands).	Spun Yarn, Lbs. per Inhab.
	Spun.	Exported.			
1820 . . .	108	23	21	£13,510	5
1821–30 . .	163	39	24	11,330	7
1830 . . .	223	64	28	13,960	9
1831–40 . .	303	90	30	17,705	12
1840 . . .	407	118	29	23,680	15
1841–50 . .	469	136	29	25,450	17
1850 . . .	529	124	23	25,930	20
1851–60 . .	767	171	23	34,880	27
1860 . . .	1,027	197	19	51,240	35
1861–70 . .	714	136	19	59,470	24
1870 . . .	991	186	19	78,360	32
1871–80 . .	1,142	222	19	71,110	34
1881 . . .	1,324	255	19	68,470	38

M.—Prices of Cotton, Yarn, Calico, Great Britain.

Years.	Pence.			Ratio.		
	Raw Cotton, Lbs.	Yarn, Lbs.	Calico, Yards.	Cotton.	Yarn.	Calico, Yards.
1802–10 .	22·2	39	20·5	100	177	93
1811–20 .	21·3	33	16·8	100	155	79
1821–30 .	8·3	17	8·2	100	205	99
1831–40 .	7·9	14	5·2	100	177	66
1841–50 .	5·3	13	3·4	100	245	64
1851–60 .	5·9	11	2·9	100	186	49
1861–70 .	12·8	20	4·2	100	156	33
1871–80 .	7·1	15	3·0	100	211	42
1881 . .	6·3	13	2·2	100	206	35

Digitized by Google

N.—Cost of Production (1880).

	Per 100 Yards, Pence.	
	Calico.	Prints.
British	276	384
American	424	592
Greek	353	...
Chinese	310	510
German	298	408
French	312	425

O.—Length of Fibre.

	Inches.		Inches.
Sea Island	1·61	Brazilian	1·17
Egyptian	1·41	New Orleans	1·02
Peruvian	1·30	East Indian	0·89

P.—Crop of United States.

Year.	Millions of Lbs.		Ratio of Exports, per Cent.	Price per Lb.	Production, Lbs. per Inhabitant.
	Crop.	Exported.			
1803	41	40	98	17d.	7
1810	99	95	96	15	14
1820	135	125	92	13	14
1830	350	298	85	6	27
1831-40 (aver.)	720	610	87	6·2	48
1840	878	744	84	4·5	52
1841-50	1,140	920	80	4·2	57
1850	890	665	75	6·2	39
1851-60	1,610	1,260	78	5·3	60
1860	1,880	1,446	77	5·2	60
1861-70	920	505	55	18·2	27
1870	1,540	1,010	66	10·3	40
1871-80	2,123	1,465	70	7·0	46
1881	3,161	2,170	69	6·1	63

Q.—Cotton Cultivation.

	Acres, Thousands.	Crop, Millions Lbs.	Value, Millions £.	Lbs. Cotton per Acre.
United States	13,613	3,161	63·4	234
India	5,200	540	12·3	104
Egypt	872	282	9·2	324
Brazil	150	42	1·2	280
West Indies, &c.	100	14	0·4	140
Total	19,935	4,039	86·5	202

Digitized by Google

One man can cultivate 12 acres, or, with machinery, 30 acres. Seed cotton weighs 3 times as much as ginned cotton or cotton-wool, the seed forming two-thirds. Thus, in the above table, in the United States, a yield of 234 lbs. cotton means that before ginned the crop averaged 700 lbs. seed-cotton per acre.

In Table C. the value of manufactured cotton goods in United States, Russia, and Spain, is artificially enhanced by protective tariffs. The consumption of cotton per operative is higher in United States than England, because the Americans have a greater proportion of men than in England in the mills. In 1881 Great Britain manufactured 5350 million yards of cotton-cloth, and exported 4800 million yards, home consumption being only one-tenth of the quantity produced. Great Britain consumes one-third of the world's crop of cotton, but produces only 27 per cent. of the cotton-cloth, the rest being exported as yarn. England gets her raw cotton one halfpenny per lb. cheaper than Germany.

COURTS-MARTIAL.—In the British army the number of men tried was :—

Year.	Number.	Ratio of Army.
1865	18,590	8·4
1875	12,217	6·7
1880	13,711	7·2

Almost one-fourth of the offences (23 per cent.) proceeded from drink. The number of men discharged for bad conduct was :—

1870	1,616	1880	1,826

The average for the decade was 1752, or less than 1 per cent. of the force.

COUSINS, MARRIAGE OF.

	Per 1000 Marriages.		Per 1000 Marriages.
London	15	Nobility	45
England	21	France	20

Barrenness is 3 times more frequent than in ordinary marriages. The idiots in asylums in England show 14 per cent. children of cousins.

According to Huth 7 per cent. of deaf and dumb children (1861) were found to be children of cousins. In Italy 9 per cent. of such marriages are barren, or more than double the ordinary ratio.

Digitized by Google

COWS.

	Number, Thousands.	Cows per 100 Inhab.	Slaughter, Thousands.	Tons Beef, Thousands.	Beef, lbs. per Inhab.
United Kingdom .	9,905	28	1,980	690	44
France . . .	11,480	30	2,300	550	34
Germany . . .	15,790	34	3,160	810	40
Russia . . .	22,770	29	4,550	1,050	30
Austria . . .	13,133	35	2,630	590	36
Italy . . .	3,490	13	700	160	13
Spain and Portugal .	3,623	18	720	166	19
Belgium and Holland	2,708	29	540	170	36
Scandinavia . .	4,553	54	910	240	60
Switzerland . .	1,036	36	200	50	40
Roumania, &c. .	3,858	46	570	130	34
Europe . .	92,346	30	18,260	4,606	35
United States . .	33,360	65	6,660	1,750	75
Canada . . .	2,702	64	540	135	65
Australia . . .	7,863	270	400	100	84
River Plate . .	18,390	610	1,000	200	150
Algeria . . .	1,204	40	200	50	37
Cape Colony . .	1,330	110	100	25	50
The World . .	157,195	43	27,160	6,866	38

For consumption of beef, see *Meat*.

CREMATION.—A body weighing 140 lbs. produces 3 lbs. ashes; time for burning, 55 minutes.

CRIME.

A.—United Kingdom since 1840.

Period.	Annual Average of Committals. England.	Scotland.	Ireland.	United Kingdom.
1840–49 . .	27,910	4,045	25,220	57,175
1850–59 . .	23,924	3,860	13,640	41,424
1860–69 . .	19,230	3,315	5,060	27,605
1870–79 . .	15,290	3,110	4,412	22,812

B.—Average Committals per 100,000 Inhabitants.

Period.	England.	Scotland.	Ireland.	United Kingdom.
1840–49 . .	164	149	302	204
1850–59 . .	126	130	227	151
1860–69 . .	91	104	91	92
1870–79 . .	64	89	84	69

Digitized by Google

C.—United Kingdom, Convictions since 1840.

Period.	Annual Average. England.	Scotland.	Ireland.	United Kingdom.
1840-49 . .	21,280	3,029	11,730	36,039
1850-59 . .	18,291	2,902	7,705	28,898
1860-69 . .	14,530	2,463	2,918	19,911
1870-79 . .	11,720	2,190	2,492	16,402

D.—Ratio of Convictions to Committals, per Cent.

Period.	England.	Scotland.	Ireland.	United Kingdom
1840-49 . .	75	75	47	63
1850-59 . .	76	74	58	70
1860-69 . .	76	74	58	72
1870-79 . .	78	71	56	72

E.—England and Wales (1879).

	Number of Crimes.		Number of Crimes.
Murder . .	148	Rape, &c. . .	521
Homicide . .	234	Burglary . .	5,297
Attempt to kill .	814	Assault, &c. . .	8,211
Infanticide . .	88		
Total	15,313		

The above does not include cases of larceny, which are counted among minor offences, Table H.

F.—Arrests for Crime, England and Wales (1879).

	Males.	Females.	Total.
Arrested	18,377	5,281	23,658
Discharged . . .	6,135	2,210	8,345
Tried	12,242	3,071	15,313
Acquitted . . .	...	...	2,788
Convicted	...	...	12,525

G.—Sentences on Criminals (1879).

Death	34	Imprison. under 2 years	4,553
Penal servitude for life	10	Do. under 6 months .	5,887
Do. over 10 years .	91	To Reformatories .	195
From 2 to 10 years .	1,401	Fined	354
Total	12,525		

H.—Minor Offences, England and Wales (1881).

	Offences.		Sentences.
Drunkenness . .	174,480	Fined . . .	367,334
Larceny . . .	50,800	Prison, 6 months .	2,095
Injury to property .	21,030	Under 6 months .	97,003
Against bye-laws .	46,357	Bailed . . .	16,003
Assault . . .	84,284	Reformatory . .	3,601
Against education laws	67,350	Various . . .	44,930
Sundry . . .	224,736	Discharged . .	138,071
Total . .	669,037	Total . .	669,037

Digitized by Google

I.—Criminal Population of England (1880).

Locality.	Males.	Females.	Total.
Convict prisons . .	9,184	1,113	10,297
Local prisons . .	14,607	3,420	18,027
At large . . .	31,992	9,056	41,048
Total . .	55,783	13,589	69,372

K.—Ratio of Ages in Local Prisons (1880).

Under 21 years	20·6
21 to 40 ,, ...	54·7
41 to 60 ,, ...	20·8
Over 60 ,, ...	3·9
	100·0

L.—Scotland, Prison Population.

Year.	Males.	Females.	Total.	Per 100,000 Inhabitants.
1840 . . .	1,362	686	2,048	80
1850 . . .	2,042	1,017	3,059	108
1860 . . .	1,106	1,059	2,165	71
1870 . . .	1,726	1,099	2,825	83
1880 . . .	2,065	1,008	3,073	83

M.—Murders in all Countries.

	Annual Average.	Ratio per Million Deaths.
England	377	711
Ireland	91	883
France	662	796
Germany	995	837
Russia	2,400	970
Austria	590	930
Italy	2,470	3,024
Spain	1,600	3,200
Belgium	90	720
Scandinavia	120	800
United States	2,060	2,460
Total	11,455	1,432

The above includes homicides, and in some countries infanticide. The deliberate murders (excluding infanticide and manslaughter) are about one-third of the above, and in Spain and Italy one-sixth.

Digitized by Google

N.—France, Ratios of Criminals.

Age.		Occupation.	
Under 20	18	Men of fortune	6
20 to 40	54	Servants	13
40 to 60	23	Tradesmen	14
Over 60	5	Artisans, &c.	67
Total	100	Total	100

Of the total only 64 per cent. could read and write. The ratio of habitual criminals has increased as follows:—

	Per Cent.		Per Cent.
1830	8	1870	41
1848	17	1880	48

Thus one-half of the crime in France is committed by professional malefactors.

O.—Convicts in Penal Servitude.

Period.	Number, Average.		Convicts per 100,000 Inhab.	
	England.	France.	England.	France.
1830–40	...	16,820	...	511
1841–60	...	18,330	...	515
1861–70	10,680	18,210	506	489
1871–80	9,014	16,630	366	458

P.—Crime in Belgium.

Year.	Number of Convicts.	Per 10,000 Inhab.	Year.	Number of Convicts.	Per 10,000 Inhab.
1840	9,012	23	1860	10,810	23
1850	11,133	25	1876	12,420	24

Q.—Crime in France.

Period.	Offences per 100,000 Inhabitants.		
	Grave.	Minor.	Total.
1830–39	23	208	231
1840–49	21	298	319
1850–59	18	424	442
1860–69	11	387	398
1870–79	12	432	444

In Italy the average number of crimes in the years 1874–76 was 7085, of which 2470 were murders or homicides.

Digitized by Google

CRISES.—The most remarkable since the middle of the 18th century have been as follows :—

1763. Amsterdam, originating with the house of De Neufville. Failures, 20 in Holland, 20 in England, 37 in Hamburg.
1773. Failures in Holland exceeding 10 millions.
1799. Hamburg, 82 failures, 2 millions. Panic at Liverpool. Parliament lent half-a-million in Exchequer bills on goods.
1814. England, 240 banks suspended.
1825. Manchester, failures 2 millions.
1831. Calcutta, failures 15 millions.
1837. United States, "Wild-cat" crisis; all banks closed.
1839. Bank of England saved by Bank of France. Severe also in France, where 93 companies failed for 6 millions.
1844. England. State loans to merchants. Bank of England reformed.
1847. England, failures 20 millions; discount 13 per cent.
1857. United States, 7200 houses failed for 111 millions.
1866. London, Overend-Gurney crisis; failures exceeded 100 millions.

CURRENT.—In the Pacific Ocean a bottle was thrown overboard in 4° S. and 119° W., and after 455 days was picked up, June 1881, in the Feejee Islands, having been carried 6700 miles, or 15 miles a day.

CUSTOMS.

A.—CUSTOMS-REVENUE OF ALL NATIONS.

	Amount (Thousands £).		Ratio to Total Commerce, 1881.	Shillings, per Inhabitant.	
	1871-80.	1881.		1871-80.	1881.
			Per Cent.		
United Kingdom . .	20,110	19,184	3·36	12·5	11·6
France . . .	10,320	12,615	3·78	5·7	7·5
Germany . . .	8,640	9,630	3·28	4·0	4·2
Russia	10,525	12,170	10·02	3·0	3·1
Austria . . .	2,610	3,050	2·38	1·5	1·6
Italy	5,080	5,570	5·80	3·6	3·9
Spain	4,410	4,790	12·10	5·5	5·7
Portugal . . .	1,790	2,160	15·22	8·5	10·1
Belgium . . .	780	1,010	0·87	3·1	3·9
Holland . . .	415	430	0·36	2·2	2·2
Denmark . . .	950	980	5·42	10·0	10·0
Sweden and Norway .	2,390	2,515	7·05	7·6	7·6
Europe . . .	68,020	74,104	3·90	4·4	4·6
United States . .	26,030	40,590	13·10	12·0	16·6
Canada . . .	2,715	2,880	8·23	13·0	12·8
Australia . . .	4,250	6,226	6·11	34·0	43·0
Brazil	6,680	7,310	20·32	13·1	15·2
India	2,220	2,330	2·33	0·2	0·2
Egypt	780	905	4·51	4·0	4·4
The World . .	110,695	134,345	5·10	3·9	4·4

Digitized by Google

B.—British Customs-Revenue.

Year.	Thousands £.	Ratio to Commerce.	Shillings, per Inhab.
1580 . . .	14	0·42	0·1
1614 . . .	178	4·22	0·8
1684 . . .	530	6·70	2·0
1720 . . .	1,555	10·40	5·1
1800 . . .	6,788	10·02	13·0
1827 . . .	21,009	23·10	18·1
1844 . . .	24,277	20·05	18·0
1866 . . .	21,276	4·95	14·2
1881 . . .	19,184	3·36	11·4

C.—Incidence of British Customs.

	Amount Paid by Classes.			Total Amount.
	Rich.	Middle.	Working.	
Spirits	£170,000	£1,350,000	£2,703,000	£4,223,000
Wine	455,000	885,000	26,000	1,366,000
Tea	160,000	1,288,000	2,526,000	3,974,000
Coffee	11,000	90,000	212,000	313,000
Fruits	35,000	285,000	190,000	510,000
Tobacco, &c. . .	370,000	2,890,000	5,620,000	8,890,000
Total . . .	£1,201,000	£6,808,000	£11,267,000	£19,276,000

D.—Incidence, per Head, of each Class.

	Rich.	Middle.	Working.	Total.
Spirits	£0 2 11	£0 2 10	£0 2 3	£0 2 5
Wine	0 7 10	0 1 10	...	0 0 10
Tea	0 2 9	0 2 9	0 2 1	0 2 3
Coffee	0 0 2	0 0 2	0 0 2	0 0 2
Fruits	0 0 7	0 0 7	0 0 2	0 0 3
Tobacco, &c. . .	0 6 5	0 5 6	0 5 0	0 5 5
Total . . .	£1 0 8	£0 13 8	£0 9 8	£0 11 4

The working classes form 69 per cent., the middle class 28 per cent., and the upper class 3 per cent. of the population of the United Kingdom, as appears from the Probate returns (1877).

Digitized by Google

D

DEAF AND DUMB.

A.—Number in Various Countries.

	Number.		Per Million Inhab.	
	1881.	1871.	1881.	1871.
United Kingdom .	14,328	19,237	597	611
France . . .	20,189	21,130	630	603
Germany . . .	20,470	30,900	724	770
Russia . . .	27,834	...	631	...
Austria . . .	21,684	34,450	802	980
Italy	12,618	19,800	628	702
Spain . . .	7,255	10,700	633	655
Switzerland . .	3,976	6,820	1,996	2,620
Belgium and Holland	2,166	3,050	335	358
Denmark . . .	1,260	...	1,114	...
Sweden and Norway .	2,397	5,540	605	920
United States . .	6,030	18,150	460	480

B.—United Kingdom, per Million Inhabitants.

	1881.	1861.	1871.
England . .	545	581	504
Scotland . .	552	753	633
Ireland . .	664	975	1,028
United Kingdom .	597	701	611

Local causes have much influence, the rate being only 295 in Huntingdonshire, and as high as 820 per million in Worcestershire. The danger of children being born deaf and dumb is six times greater when the parents are cousins. The ratio of sex is in most countries 55 per cent. males, 45 per cent. females; but in Italy the ratio is 58 to 42. The high rate of deaf and dumb in Ireland is partly due to emigration. The rate in the United States is much below the average in Europe, but there is an increase of ratio since 1831, coincident with the growth of numerous large towns.

Digitized by Google

DEATHS.

A.—Death-rates of Countries.

	1861–70.	1871–80.	20 Years.
England . .	22·6	21·3	21·9
Scotland . .	22·1	21·8	21·9
Ireland . .	16·8	18·3	17 5
United Kingdom	21·4	21·0	21·2
France . .	22·9	24·3	23·6
Germany . .	27·1	27·1	27·1
Austria Proper .	30·4	31·2	30·8
Hungary . .	38·7	40·1	38·9
Italy . . .	30·1	29·7	29·9
Spain . . .	29·7	29·7	29·7
Belgium . .	22·8	22·6	22·7
Holland . .	24·9	24·3	24·6
Denmark . .	20·1	19·3	19·7
Sweden . .	20·0	18·4	19·2
Switzerland .	24·0	24·0	24·0

Where the same rate is quoted above in both decades it means that the rate previous to 1870 is only an estimate.

B.—Death-rate of Cities (1878–80) per 1000 Inhabitants.

Alexandria . .	34·2	Dublin . . .	27·1	New York . .	26·2
Amsterdam . .	23·7	Edinburgh . .	20·2	Nottingham .	22·4
Baltimore . .	21·1	Geneva . . .	21·2	Oldham . . .	22·8
Belfast . . .	28·2	Glasgow . .	25·3	Palermo . . .	28·5
Berlin	27·6	Hamburg . .	24·5	Paris	28·6
Birmingham .	19·8	Havanna . .	45·7	Philadelphia .	20·3
Bombay . . .	33·7	Hull	23·8	Portsmouth . .	19·7
Bordeaux . .	26·7	Leeds . . .	21·6	Quebec . . .	22·9
Boston . . .	23·5	Leicester . .	21·8	Rio Janeiro . .	39·4
Bradford . . .	21·1	Leipsic . . .	26·1	Rome	26·8
Breslau . . .	32·5	Liverpool . .	26·7	Rotterdam . .	23·3
Brighton . . .	19·0	London . . .	21·1	Rouen . . .	31·3
Bristol . . .	19·6	Lyons . . .	24·7	St. Louis . . .	19·3
Brooklyn . .	25·6	Madras . . .	38·8	St. Petersburg .	51·4
Brussels . . .	23·9	Madrid . . .	37·4	San Francisco .	18·1
Bucharest . .	24·5	Manchester .	25·5	Sheffield . . .	21·6
Buda-Pesth . .	35·2	Marseilles . .	28·0	Stockholm . .	24·7
Buenos Ayres .	30·1	Mexico . . .	30·9	Sunderland . .	20·9
Calcutta . . .	31·1	Milan . . .	30·6	Turin . . .	25·6
Chicago . . .	27·2	Montreal . .	37·2	Valparaiso . .	64·6
Christiania . .	18·8	Munich . . .	32·8	Venice . . .	22·7
Copenhagen . .	22·1	Naples . . .	33·1	Vera Cruz . .	70·5
Cork	26·1	Newcastle . .	21·8	Vienna . . .	29·0
Dresden . . .	25·4	New Orleans .	22·7	Zurich . . .	25·6

Digitized by Google

C.—Death-rate for Ages, per 1000 Inhabitants.

	Under 5.	5–10.	10–25.	25–45.	45–55.	55–65.	65–75.
England . .	63·6	6·6	5·5	10·2	17·4	31·8	64·3
United States .	58·8	10·1	5·4	10·8	17·6	27·2	51·4
France . . .	75·6	9·2	8·8	12·7	16·6	28·3	66·3
Prussia . . .	...	9·2	6·4	11·5	18·6	33·0	64·5
Austria . . .	111·7	9·8	6·6	11·3	21·1	41·5	92·8
Switzerland .	...	8·5	6·3	11·6	19·3	38·4	82·5
Italy . . .	110·6	11·6	7·8	11·7	17·3	33·1	70·1
Spain . . .	106·2	11·7	8·8	12·9	23·8	42·0	95·0
Belgium . . .	68·1	12·7	8·1	12·9	19·0	32·3	74·5
Sweden . . .	57·6	8·0	4·8	8·2	14·7	27·4	62·6
Medium . . .	81·5	9·7	6·8	11·4	18·5	33·5	72·4

D.—Deaths according to Season.

	England.	France.	Holland.	Austria.	Italy.	Medium.
Spring . .	110	117	88	115	88	104
Summer .	96	88	91	82	105	92
Autumn .	95	86	126	91	100	100
Winter . .	99	109	95	112	107	104
Total .	400	400	400	400	400	400

	Winter Half.	Summer Half.	Total.		Winter Half.	Summer Half.	Total.
London . .	54	46	100	Scotland .	55	45	100
York . .	56	44	100	Sweden .	52	48	100
Manchester	57	43	100	Stockholm	57	43	100
Chester .	58	42	100	Switzerland	56	44	100
England .	55	45	100	Germany	52	48	100

E.—Deaths according to Months, 100 = Par.

Month.	London.	France.	Germany.	Month.	London.	France.	Germany.
January .	103	114	104	July . .	89	87	94
February .	99	112	100	August .	95	97	89
March . .	124	110	113	September	113	102	94
April . .	91	107	109	October .	84	96	92
May . .	84	95	110	November	92	94	98
June . .	99	88	94	December	127	98	103
6 Months	600	626	630	6 Months	600	574	570

Digitized by Google

F.—Deaths in Classes (Professor Conrad).

	Affluent.	Middle.	Working.
Still-born	28	53	53
0– 1 year	118	240	206
1– 5 years	95	192	220
5–15 „	48	49	58
15–20 „	35	24	21
20–30 „	86	63	64
30–60 „	247	204	222
Over 60 years	343	175	156
Total	1,000	1,000	1,000

G.—Death-rate of Married and Single.

Age.	Scotland.		France.			
			Male.		Female.	
	Married.	Single.	Married.	Single.	Married.	Single.
15–20	...	...	38	8	12	7
20–30	7·2	13·6	7	12	9	8
30–40	10·2	16·0	7	12	9	10
40–50	15·5	19·8	11	18	10	14
50–60	22·8	27·4	18	29	16	23
60–70	44·0	52·4	39	55	37	49

The above table does not include widowed persons.

H.—Death-rate in Professions (Neison).

Per 1000 Persons, Age 25 to 65 Years, Deaths per Annum.

Ladies' maids	8·0	Catholic priests	18·3
Protestant clergy	10·6	Coachmen	18·4
Barristers	11·9	Surgeons	19·1
Grooms	12·6	Apothecaries	19·1
Physicians	12·9	Wine merchants	25·0
Valets	16·7	Innkeepers	27·0
Attorneys	16·8	Cabdrivers	26·6
All England	18·0		

I.—Death-rate of Clergy.

	Age.		
	25–45.	45–65.	25–65.
Church of England	5·4	15·8	10·1
Catholic priests, English	9·7	26·9	15·7
German Protestant clergy	5·8	20·0	11·8
Population of Germany	9·7	25·9	16·8
Austrian Catholic priests	8·0	21·8	15·2
Austrian Greek clergy	8·7	22·1	15·1
English male population	11·5	25·2	18·4

This table is more modern than Neison's, and gives a lower death-rate for clergy.

Digitized by Google

K.—Death-rates in Scotland.

Age 45 to 55 Years.

	Per 1000.		Per 1000.		Per 1000.
Farmers . . .	12	Carpenters .	17	Beer-sellers .	28
Shoemakers .	15	Miners . . .	20	Scotchmen .	19
Grocers . . .	16	Butchers . . .	23	Scotchwomen	16

L.—Institute of France (1795–1870).

Age.	Death-rate.		Life-expectation, Years.	
	Institute.	General Population.	Institute.	General Population.
35–40	12	13	32	29
40–50	14	15	26	24
50–60	21	22	18	17
60–70	44	47	12	11
70–80	82	90	7	6½

M.—American and English Rates compared.

Age.	Annual Deaths per 1000 Inhabitants.			
	Massachusetts.	Maryland.	United States.	England.
Under 5	65·8	51·7	58·8	63·6
5–10	10·7	9·5	10·1	6·6
10–15	5·1	5·4	5·3	3·8
15–25	5·8	5·4	5·6	6·4
25–45	11·9	10·1	10·8	10·2
45–55	16·4	18·2	17·6	17·4
55–65	26·3	28·1	27·2	31·8
65–75	46·9	56·5	51·4	64·3

N.—Forty Years of English Death-rates.

Age.	Death-rate per 1000 Inhabitants per Annum.			
	1841–50.	1851–60.	1861–70.	1871–80.
Under 5	66·2	68·0	68·6	63·5
5–20	7·3	7·2	6·3	5·3
20–35	9·8	9·3	9·0	8·1
35–55	15·1	14·6	15·2	15·3
55–65	30·1	29·1	30·5	32·0
65–75	64·0	62·0	63·0	65·0

Digitized by Google

English Death-rates—*continued.*

Age.	Males.			Females.		
	1841-60.	1861-80.	1841-80.	1841-60.	1861-80.	1841-80.
0-5	72·0	71·0	71·5	62·1	61·1	61·6
5-10	8·8	7·5	8·1	8·6	7·1	7·9
10-15	5·0	4·2	4·6	5·2	4·2	4·7
15-20	6·9	5·8	6·3	7·6	6·2	6·9
20-25	9·2	8·0	8·6	8·8	7·4	8·1
25-35	9·8	9·6	9·7	10·2	9·2	9·7
35-45	12·7	13·7	13·2	12·6	11·8	12·2
45-55	18·2	19·4	18·8	15·7	15·5	15·6
55-65	31·4	33·9	32·6	27·8	28·4	28·1
65-75	66·5	67·8	67·1	59·9	59·9	59·9
75-85	147·4	147·4	147·4	135·2	134·0	134·6

Period.	Per 1000 Inhabitants per Annum.		
	Male.	Female.	Total Pop.
1841-50 . . .	23·1	21·6	22·4
1851-60 . . .	23·1	21·4	22·3
1861-70 . . .	23·7	21·4	22·6
1871-80 . . .	22·6	20·1	21·3

O.—Army Death-rates.

French.

Station.	1863-66.	Station.	1863-66.
France	12·3	Italy	35·1
Algeria	24·3	General . . .	14·5

Arm.	Russian. 1841-52.	Russian. 1857-61.	British. 1879-80.
Infantry . . .	42·0	21·0	6·5
Cavalry . . .	23·0	14·0	5·2
Artillery . . .	27·0	15·0	7·2
Average . . .	38·0	19·0	6·7

P.—Death-rate in British Army (1879-80).

Station.		Arm.	
Ireland . . .	6·50	Cavalry . . .	5·15
England . . .	6·53	Engineers . .	6·27
Scotland . . .	7·78	Infantry . . .	6·51
India . . .	9·63	Artillery . . .	7·19
General average .	6·66	General average .	6·66

This does not include deaths in war.

Digitized by Google

The death-rate among our troops before Dr. Farr's barrack-reforms was enormous, the averages for the years 1818–40 being as follows:—

Great Britain	15·9	Gibraltar	22·1	Ceylon	57·0
Australia	14·1	Corfu	28·3	Bengal	63·0
Cape	15·5	Mauritius	30·5	Jamaica	143·0
Canada	21·2	Madras	52·0	Sierra Leone	483·0

In the United Kingdom the rate from 1830–40 was 15·3 for cavalry, 15·5 for infantry, and 11·0 for officers.

Q.—English Able-bodied Males (1879).

	Death-rate per 1000.		Death-rate per 1000.
Civilians	10·02	Royal navy	8·58
Soldiers	6·66	Merchant navy	19·10

Of 100 deaths in merchant shipping, 55 are from drowning, 35 from sickness, and 15 from various causes.

R.—Death-rate in British Colonies (1876–80).

St. Helena	13·2	Ceylon	21·6	Hong-Kong	25·6
Australia	14·1	Jamaica	21·9	Mauritius	28·3
Canada	18·5	Barbadoes	23·8	Trinidad	34·1
Singapore	20·1	Bermuda	24·1	Demerara	34·5

S.—Death-rate of London since 1725.

1725–50	39·9	1800–30	33·7	1874–78	22·8
1751–99	38·8	1840–45	24·5	1879–81	21·7

T.—Violent Deaths: All Countries.

	Number.	Ratio per 1000 Deaths.
United Kingdom	23,822	33·1
France	16,373	19·7
Germany	24,592	21·4
Russia	18,500	7·4
Austrian Proper	10,150	16·0
Italy	6,656	8·3
Spain	4,700	9·6
Switzerland	2,550	38·2
Belgium	2,577	22·0
Denmark	1,054	28·1
Sweden	2,740	31·6
Norway	1,290	37·7
Europe	115,004	16·2
United States (1870)	22,740	41·1
Total	137,744	17·1

The above total includes 13,400 murders, 21,200 suicides, and 103,000 accidental deaths.

Digitized by Google

U.—Sexes of Violent Deaths.

	Per Cent.	
	Male.	Female.
England . .	72·6	27·4
Scotland . .	73·7	26·3
Ireland . .	69·7	30·3
United Kingdom	72·5	27·5

X.—Violent Deaths in England (1878).

Cause.	Males.	Females.	Total.	Per 1000 Deaths of Population.
Railways . . .	1,077	75	1,152	2·1
Mines	1,076	...	1,076	2·0
Fire	619	859	1,478	2·7
Drowned (accid.)	2,824	842	3,666	6·8
Poisoned „	235	118	353	0·6
Cabs, &c. . . .	1,000	199	1,199	2·2
Fall	1,509	632	2,141	4·0
Sunstroke . . .	184	42	226	0·4
Various . . .	3,623	1,780	5,403	10·1
Accidental . .	12,147	4,547	16,694	30·9
Suicide	1,299	465	1,764	3·3
Murder . . .	206	168	374	0·7
Executed . . .	14	1	15	...
Total . . .	13,666	5,181	18,847	34·9

Y.—Scotland, Violent Deaths.

Cause.	Number.	Per 1000 Deaths.
Drowned	721	9·3
Suicide	144	1·9
Drink	197	2·5
Exposure	58	0·7
Poison	55	0·7
Various	1,815	23·6
Total	2,990	38·7

Z.—Violent Deaths, United Kingdom.

Per 1000 Deaths.

Period.	England.	Scotland.	Ireland.	United Kingdom.
1840–60 . .	34·2	32·3	...	...
1861–70 . .	34·5	31·8	24·1	32·7
1871–80 . .	34·3	35·5	21·1	32·6

Digitized by Google

AA.—Accidental Deaths per Annum.

	No. per Million Inhab.	Ratio of Sexes.		Percentage of Accidental Deaths.	
		Male.	Female.	Drowned.	Burnt.
England . . .	670	74	26	22	9
France	280	78	22	41	...
Prussia . . .	407	76	24	...	...
Saxony . . .	298	76	24	...	...
Bavaria . . .	236	75	25	...	...
Hanover . . .	396	79	21	...	...
Austria . . .	258	73	27	...	...
Switzerland . .	466	...	...	40	4
Italy	181	75	25	...	...
Spain	202	80	20	24	3
Belgium . . .	330	82	18	27	...
Denmark . . .	232	...	...	60	2
Sweden . . .	479	73	27	54	5
Norway . . .	681	...	...	75	4
Russia	201	...	...	53	6
United States .	623	67	33	16	24
New York . .	668	...	...	...	...
London . . .	665	...	...	...	...
Paris	682	...	...	...	...

BB.—Deaths from Drink.

	Per Annum.	Per 1000 Deaths.		Per Annum.	Per 1000 Deaths.
England . . .	1,082	2·04	Italy	709	0·85
Scotland . . .	230	3·29	Switzerland . .	244	3·81
Ireland	280	2·78	Sweden . . .	502	6·25
France	872	1·05	Norway . . .	72	2·36
Belgium . . .	456	3·83	New York . .	324	12·08

CC.—Infant Mortality.

Percentage who Die under 5 Years.

Norway . . .	17	England . . .	26	Austria . . .	36
Ireland . . .	17	Belgium . . .	27	Spain	36
Denmark . . .	20	France . . .	31	Russia	38
Scotland . . .	20	Prussia . . .	32	Italy	39
Sweden . . .	22	Holland . . .	33	Liverpool . .	46

Dr. Playfair states that in England 18 per cent. of children in the upper classes, 36 per cent. of those of tradespeople, and 55 per cent. of workmen's children, die before reaching their fifth birthday; too high an estimate.

Digitized by Google

DEBTS OF NATIONS.

A.—Debts in Millions Sterling.

	1820.	1848.	1870.	1882.
United Kingdom	841	773	801	769
France	140	182	468	911
Germany	53	40	148	229
Russia	50	90	280	553
Austria	99	125	340	419
Italy	25	36	374	522
Spain	52	113	285	390
Portugal	8	17	59	94
Holland	110	114	76	80
Belgium	...	18	28	62
Denmark	4	12	13	10
Sweden and Norway	...	1	6	20
Greece	...	10	18	18
Turkey	...	...	92	110
Europe	1,382	1,531	2,988	4,187
United States	26	48	496	333
Spanish-America	4	62	144	237
Canada	...	...	17	40
Australia	...	...	37	97
India	29	51	108	156
South Africa	...	...	2	14
Egypt	...	...	37	106
The World	1,441	1,692	3,829	5,170

The above includes funded and floating debt, and uncovered paper-money, but no municipal debts or railway guarantees.

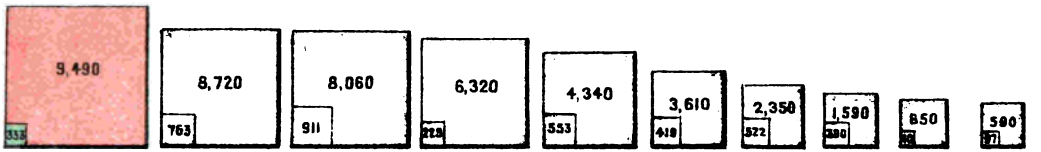
The extra expenditure of nations since 1830 accounts for 3691 millions of debt, viz. :—

	Millions £.
Railways and telegraphs	767
Crimean War	305
War of American Union	474
Franco-German War	382
Russo-Turkish War	211
Ironclad ships	115
Emancipation of Russian serfs	85
Roads and bridges	720
Sundries	632
Total	3,691

Digitized by Google

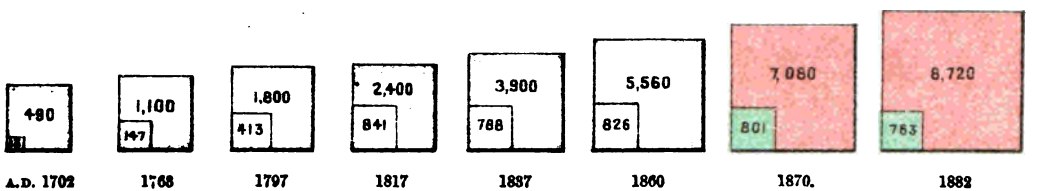
NATIONAL DEBT.

Debt compared with wealth (1882).



The figures on the Red ground indicate wealth, those on the Green debt, in millions £.

British National Debt.



The figures on the Red ground indicate wealth, those on the Green debt, in millions £.

Digitized by Google

Digitized by Google

B.—RATIO OF DEBT PER INHABITANT, IN £.

	1820.	1848.	1870.	1882.
United Kingdom	41	28	26	22
France	4	5	13	24
Germany	2	2	4	5
Russia	1	1½	4	7
Austria	4	4	10	12
Italy	1½	2	16	18
Spain	4	8	19	24
Portugal	3	5	15	22
Holland	18	38	22	20
Belgium	...	4	6	12
Denmark	3	8	6	5
Sweden and Norway	...	...	1	3
Greece	...	10	11	10
Turkey	...	...	6	25
Europe	7	6	10	13
United States	3	2	13	6
Spanish America	...	3	6	10
Canada	...	...	5	9
Australia	...	...	19	34
South Africa	...	...	2	14
Egypt	...	...	8	21
The World	4	4	9	9

C.—DEBT COMPARED WITH WEALTH (1882).

	Millions £.		Ratio of Debt.
	Wealth.	Debt.	
United Kingdom	8,720	763	8·75
France	8,060	911	11·30
Germany	6,320	229	3·63
Russia	4,340	553	12·70
Austria	3,610	419	11·64
Italy	2,350	522	22·22
Spain	1,590	390	24·53
Portugal	370	94	25·40
Holland	990	80	8·08
Belgium	810	62	7·67
Denmark	360	10	2·80
Sweden and Norway	980	20	2·04
Greece	210	18	8·60
Europe	38,710	4,071	10·52
United States	9,490	333	3·49
Canada	650	40	6·15
Australia	590	97	16·50
Total	49,440	4,541	9·18

For Wealth, see *Capital.*

Digitized by Google

D.—Interest compared with Income.

	Millions £.		Burthen of Interest.
	Income.	Interest.	
United Kingdom	1,247	28·7	2·30
France	965	31·8	3·29
Germany	850	9·2	1·08
Russia	760	24·1	3·18
Austria	602	18·9	3·15
Italy	292	19·6	6·73
Spain	188	12·4	6·60
Portugal	45	2·8	6·20
Holland	104	2·2	2·12
Belgium	120	2·9	2·42
Denmark	47	0·4	0·85
Sweden and Norway	104	0·6	0·57
Greece	23	0·8	3·50
Europe	5,347	154·4	2·90
United States	1,420	12·2	0·86
Canada	118	1·8	1·53
Australia	133	4·7	3·52
Total	7,018	173·1	2·47

E.—British National Debt.

Year.	Millions.		Per Inhabitant.	
	Debt.	Interest.	Debt, £.	Interest, Shillings.
1702	13	1·3	2	4
1748	78	3·1	13	10
1763	147	4·8	21	14
1783	257	9·7	32	24
1797	418	17·0	41	34
1817	841	32·0	42	32
1837	788	29·1	32	23
1860	826	28·7	29	20
1870	801	27·0	26	18
1882	763	28·7	21	16

Gross debt in March 1882	£762,832,000
Deduct loans recoverable	29,900,000
„ Suez Canal Shares	3,976,000
Net amount of debt	£728,956,000

	Debt.	Interest.
Consols	£709,078,530	£21,294,577
Term. Annuities	37,547,700	7,107,572
Unfunded	22,077,500	294,702
March 1881	£768,703,730	£28,696,851

Digitized by Google

F.—Wealth and Debt (Great Britain).

Year.	Millions £.		Ratio of Debt.
	Wealth.	Debt.	
1702	490	13	2·66
1763	1,100	147	13·36
1797	1,800	413	22·94
1817	2,400	841	35·04
1837	3,900	788	20·21
1860	5,560	826	14·88
1870	7,080	801	11·31
1882	8,720	763	8·75

G.—Income and Interest (Great Britain).

Year.	Millions £.		Burthen of Interest.
	Income.	Int. on Debt.	
1702	55	1·3	2·35
1763	122	4·8	3·92
1797	230	17·0	7·39
1817	265	32·0	12·10
1837	420	29·1	6·94
1860	760	28·7	3·78
1870	955	27·0	2·83
1882	1,247	28·7	2·30

See *Capital.*

H.—Debt of France.

Year.	Debt, Millions £.			Wealth, Millions £.	Ratio of Debt.
	Funded.	Floating.	Total.		
1830 . . .	142	10	152	2,130	7·13
1848 . . .	207	22	229	3,024	7·60
1852 . . .	221	27	248	3,310	7·44
1869 . . .	468	36	504	5,240	9·60
1882 . . .	831	81	912	8,060	11·30

Digitized by Google

I.—Debt of Russia.

Year.	Millions £.			
	Foreign.	Internal.	Paper-Money.	Total.
1842. . .	6	23	8	37
1852. . .	12	61	22	95
1862. . .	41	99	61	202
1872. . .	105	133	74	312
1882. . .	189	273	91	553

K.—Local Debt of Great Britain (1882).

	Millions £.		Millions £.
London . . .	20·6	Sanitary . . .	56·7
9 large towns . .	43·3	Docks . . .	23·2
Rural, &c. . . .	73·0	Sundry . . .	57·0
Scotland . . .	16·3	Scotch . . .	16·3
	153·2		153·2

L.—Debts of Cities.

City.	Debt (Millions £).	Per Inhabitant.	Valuation (Millions £).	Debt to Valuation.
London . . .	20·6	£5 7 0	689	3·0
Paris . . .	85·3	34 5 0	320	26·7
Berlin . . .	5·6	5 3 0	164	3·5
Liverpool . .	21·6	39 12 0	66	32·5
Manchester .	6·2	10 18 0	62	10·0
Birmingham .	6·1	15 0 0	28	21·8
Leeds . . .	3·5	11 7 0	22	15·8
Rome . . .	2·3	7 16 0	14	16·0
Buda-Pesth .	1·3	4 5 0	44	2·9
Bradford . .	3·4	19 0 0	18	18·9
Breslau . . .	1·3	5 6 0	...	...
Bristol . . .	0·6	2 18 0	16	3·8
Munich . . .	1·5	6 0 0	15	10·0
Newcastle . .	0·7	4 17 0	14	5·0
New York . .	23·1	19 1 0	222	10·4
Philadelphia .	3·4	4 1 0	119	2·9
Brooklyn . .	7·9	14 17 0	45	17·6
St. Louis . .	4·8	13 11 0	32	15·0

Besides the above, the following cities in 1881 owed millions sterling as follows:—Boston 6, Baltimore 6, Washington 5, Cincinnati 5, Chicago 3, Pittsburg 3, Providence 2, San Francisco 1.

Digitized by Google

M.—Local Debts in United States (1881).

	Thousands.			Ratio per Inhab.	Ratio to Wealth, per Cent.
	State.	City.	Total.		
Maine	£1,720	£1,610	£3,330	£5	3·6
N. Hampshire	690	620	1,310	4	1·7
Vermont	...	120	120	...	0·2
Rhode Island	520	2,190	2,710	10	2·6
Connecticut	1,030	2,080	3,110	5	2·1
Massachusetts	6,780	13,110	19,890	11	4·0
New England	£10,740	£19,730	£30,470	8	3·1
New York	1,870	38,160	40,030	8	2·3
New Jersey	390	7,920	8,310	8	4·4
Pennsylvania	4,660	8,310	12,970	3	1·1
Delaware	150	280	430	3	2·1
Maryland	2,330	5,780	8,110	9	5·1
Dist. Columbia	...	4,730	4,730	24	10·5
Middle	£9,400	£65,180	£74,580	6	2·3
Virginia (2)	6,400	2,080	8,480	4	6·5
North Carolina	5,600	140	5,740	4	7·6
South Carolina	1,350	1,040	2,390	2	5·9
Georgia	2,080	1,770	3,850	2	5 2
Florida	270	60	330	1	3·7
Alabama	2,400	710	3,110	3	5·5
Mississippi	640	80	720	1	1·7
Louisiana	3,380	...	3,380	4	5·5
Texas	1,050	730	1,780	1	1·7
Arkansas	1,040	70	1,110	1	3·2
Kentucky	100	1,460	1,560	1	1·2
Tennessee	5,600	410	6,010	4	5·1
South	£29,910	£8,550	£38,460	2½	4·6
Ohio	1,080	7,020	8,100	3	1·2
Illinois	...	3,760	3,760	1	0·6
Missouri	3,430	5,520	8,950	4	3·2
Indiana	1,010	1,040	2,050	1	0·7
Iowa	50	420	470	...	0·2
Michigan	180	810	990	1	0·3
Wisconsin	470	790	1,260	1	0·6
Minnesota	530	610	1,140	1	0·9
Kansas	240	380	620	1	0·8
Nebraska	90	90	180	...	0·5
Colorado	30	10	40	...	0·3
West	£7,110	£20,450	£27,560	1½	0·9
California	660	1,040	1,700	2	0·6
Oregon	110	20	130	1	0·7
Nevada	110	20	130	2	1·6
Pacific	£880	£1,080	£1,960	2	0·7
The Union	£58,040	£114,990	£173,030	3½	1·8

Digitized by Google

DIAMONDS.

A.—Weight in Carats of Six Largest.

Kohinoor	103	Austrian Kaiser	139
Star of Brazil	125	Russian Czar	193
Regent of France	136	Rajah of Borneo	367

The value of the above is not regulated by size, nor easy to estimate, but none of them is worth less than £100,000.

B.—Scale of Value for Small Stones.

1 carat	£8	5 carat	£200
3 „	72	10 „	800

Cape diamonds are of inferior value; one of the largest, the Stewart, found in November 1872, sold for £11,000, weighing 288 carats, uncut. The Kimberley field, covering 9 acres, has produced diamonds to the value of 15 millions sterling since 1871, the diggings being from 100 to 170 feet deep. The annual export of diamonds from the Cape is about 1400 lbs., worth over 4 millions, and the fields employ 2000 white and 22,000 coloured diggers.

DIAMOND-DRILL.—This method of boring is found to cost about 7 shillings a foot in England. The following table shows the average wages and time employed in diamond-drill boring in the Barrow ironstone district:—

Depth, Yards.	Diameter, Inches.	Wages Paid.	Days, Working.	Cost per Foot, Pence.
48	6 to 2	£26	48	44
50	„	25	45	40
63	„	30	54	38
76	„	23	42	24
88	„	36	66	32
124	„	59	108	38
126	„	50	90	32

See *Tunnels.*

DIET.

A.—Weekly Rations in Lbs.

	Rations, Lbs.	Nitrogenous, Lbs.	Carbon, Lbs.
British soldiers	25·7	2·46	4·84
Do. in India	20·0	2·33	4·52
French soldiers	23·6	2·26	5·81
German „	28·8	1·56	5·25
Dutch „	25·0	1·67	4·82
Chelsea Hospital	22·6	1·99	5·31
English convicts	22·2	1·38	4·99
Farm-labourer	22·1	1·82	5·11
Workhouse, aged	17·8	1·50	3·96
Chelsea boys	16·7	0·88	3·93

Digitized by Google

B.—Description of Rations.

	Weight in Lbs. Weekly.				
	Bread.	Cooked Meat.	Vegetables.	Sugar.	Sundries.
Soldier . . .	7·0	3·5	7·0	0·7	7·5
Seaman . . .	8·8	5·2	3·5	0·9	...
Convict . . .	10·0	2·6	7·6	0·2	1·8
Pauper . . .	7·0	3·0	6·0	0·4	0·8
Female pauper .	6·0	2·0	4·0	0·3	0·6
Lunatic . . .	5·4	2·0	5·4	0·2	1·0
Hospitals . . .	6·0	3·0	3·5	0·5	2·0

C.—Relative Value of Food (Beef par).

Oysters	22	Turbot . . .	84	Beef	100
Milk	24	Mutton . . .	87	Duck	104
Lobsters . . .	50	Venison . . .	89	Salmon	108
Cream	56	Veal	92	Pork	116
Cod-fish . . .	68	Fowl	94	Butter	124
Eggs	72	Herring . . .	100	Cheese	155

D.—Frankland's Table of Food required to Lift a Male Adult (10 Stone) 10,000 Feet.

	Lbs.	Cost, Pence.		Lbs.	Cost, Pence.
Milk	8·02	15	Bread . . .	2·35	5
Apples	7·82	12	Rice	1·34	5
Fish	6·37	75	Flour . . .	1·31	4
Potatoes . . .	5·07	4	Arrowroot .	1·29	15
Beef	3·58	36	Oatmeal . .	1·28	3
Ham	3·00	38			

E.—Foot-tons of Energy per Ounce of Food.

	Foot-tons.		Foot-tons.		Foot-tons.
Cabbage . . .	16	Beef	55	Rice	145
Carrots	20	Egg	57	Flour	148
Milk	24	Ham	65	Arrowroot . .	151
Ale	30	Bread . . .	83	Oatmeal . . .	152
Potatoes . . .	38	Egg (yolk) . .	127	Cheese . . .	168
Porter	42	Sugar . . .	130	Butter . . .	281

Digitized by Google

F.—Components of Animal Food.

	Fat.	Nitrogen.	Water.	Various.	Total.
Lobster	1·2	19·2	76·6	3·0	100
Oyster	1·5	14·0	80·4	4·1	,,
Turbot	2·9	18·1	78·0	1·0	,,
Rabbit	3·2	13·9	73·2	9·7	,,
Salmon	5·5	16·1	77·0	1·4	,,
Milk	7·9	4·5	87·0	0·6	,,
Eggs	10·5	14·0	74·0	1·5	,,
Veal	15·8	16·5	63·0	4·7	,,
Tripe	16·4	13·2	68·0	2·4	,,
Beef	17·1	17·2	61·5	4·2	,,
Mutton	18·1	15·3	62·5	4·1	,,
Cheese	41·3	7·0	38·8	12·9	,,
Pork	44·9	9·8	43·0	2·3	,,
Bacon	63·3	8·8	25·0	2·9	,,
Butter	81·0	5·0	11·0	3·0	,,

G.—Components of Vegetable Food.

	Starch.	Nitrogen.	Water.	Various.	Total.
Mushroom	3·5	4·7	91·0	0·8	100
Cabbage	4·0	1·8	92·0	2·2	,,
Turnip	5·1	1·2	91·0	2·7	,,
Carrot	5·5	0·7	87·3	6·5	,,
Beer	9·2	0·9	89·7	0·2	,,
Parsnip	9·6	1·1	82·0	7·3	,,
Beet-root	11·3	5·0	82·7	1·0	,,
Asparagus	11·8	1·2	86·0	1·0	,,
Artichoke	14·7	3·1	76·0	7·2	,,
Yam	16 0	2·0	74·0	8·0	,,
Truffles	16·6	8·8	72·0	2·6	,,
Sugar-cane	18·0	5·5	72·0	4·5	,,
Banana	19·7	4·8	73·9	1·6	,,
Potato	20·2	2·3	75·9	1·6	,,
Bread	49·0	10·0	33·6	7·4	,,
Beans	52·6	22·0	12·8	12·6	,,
Peas	52·6	22·3	14·5	10·6	,,
Tea	55·2	28·8	12·0	4·0	,,
Lentils	56·0	25·2	11·5	7·3	,,
Millet	59·0	9·3	12·2	19·5	,,
Coffee	59·4	26·2	12·0	2·4	,,
Wheat-flour	59·7	12·6	14·5	13·2	,,
Oatmeal	63·8	12·6	15·0	8·6	,,
Cocoa	71·0	24·0	4·0	1·0	,,
Maize	71·2	9·9	13·5	5·4	,,
Rye	73·2	8·0	15·0	3·8	,,
Barley	74·3	6·3	15·0	4·4	,,
Rice	79·5	6·3	13·0	1·2	,,
Buckwheat	79·9	2·6	12·8	4·7	,,

Digitized by Google

H.—Diet of European Armies.

	Ounces Daily.					Energy, Foot-tons.
	Nitrogen.	Fat.	Carbon.	Salt.	Total.	
British . . .	4·1	1·6	17·4	0·8	23·4	3,552
French . . .	4·3	1·3	18·0	1·0	24·6	3,719
German . .	4·0	1·1	19·6	1·5	26·2	3,834
Austrian . .	3·7	1·6	17·0	1·0	23·4	3,590
Standard . .	4·6	3·0	14·3	1·1	23·0	3,888

I.—Field Rations.

	Ounces Daily.					
	Beef.	Bread.	Rice.	Coffee.	Sugar.	Total.
British (Crimea) . .	16	24	2	¼	2	44¼
Do (India) . .	16	16	4	1½	2	39½
French	7	26	3	½	1	37½
German	8	28	3	½	1	40½
Russian	16	16	...	...	...	32
Austrian	5	26	1	...	...	32
American	20	18	2	2	2	44

K.—British Navy Rations.

	Ounces Daily.	Components.			Energy, Foot-tons.
		Nitrogen.	Fat.	Carbon.	
Biscuit	20	2·0	0·2	8·4	1,720
Meat	14	1·8	3·0	5·4	1,310
Peas, flour, &c. .	7	1·0	...	3·0	560
Sugar	2	...	...	0·8	240
Cocoa	1	0·2	...	0·7	125
Total . . .	44	5·0	3·2	18·3	3,955

L.—Percentage of Carbon in Food.

Cabbage . . .	3	Eggs	16	Biscuit	42
Beer	4	Beef	27	Oatmeal . . .	42
Carrots	5	Bread	27	Sugar	42
Milk	7	Cheese	36	Flour	46
Parsnips . . .	8	Peas	36	Bacon	54
Fish	9	Rice	38	Cocoa	69
Potatoes . . .	12	Maize	38	Butter	79

See *Food.*

Digitized by Google

M.—British Prison Rations.

	Ounces Daily.		Energy, Foot-tons.	
	Hard Labour.	Light Labour.	Hard Labour.	Light Labour.
Bread	24	21	1,992	1,743
Meat	4·5	3·5	340	270
Milk	2	2	48	48
Molasses . . .	1	1	100	100
Oatmeal . . .	2	2	304	304
Cheese . . .	0·6	0·6	98	98
Flour	1·3	0·7	192	104
Salt	0·5	0·5	60	60
Cocoa	0·5	0·5	62	62
Vegetables . .	1·0	1·0	10	10
Potatoes . . .	14	14	530	530
Total . . .	51·4	46·8	3,736	3,329

N.—Average Food per Head.

	Man, aged 20–60, Ounces Daily.				Energy, Foot-tons.
	Bread.	Meat.	Butter and Cheese.	Sugar.	
United Kingdom .	21	7	2	5	3,372
France	33	5	½	1½	3,353
Germany	38	5	1	1½	3,870
Russia	32	3½	¼	½	3,015
Austria	28	5	¾	1	3,034
Italy	28	2	¼	½	2,691
Spain	26	3	...	½	2,495
Low Countries . .	30	4	1	1½	3,225
Denmark	31	4½	1½	2¼	3,558
Sweden & Norway .	22	3	1	1	2,456
United States . .	26	9	1½	1½	3,462
Average	30	5	1	1½	3,320

The above does not include fish, eggs, potatoes, fruit, vegetables, chestnuts, rice, and other articles of much importance. The aggregate food for a man doing physical or mental work should be equal to at least 3300 foot-tons daily, for a woman 2200, and for a child 1100 foot-tons.

Digitized by Google

DIGESTION.

A.—Ratio of Nitrogen Digested.

	Per Cent.		Per Cent.		Per Cent.
Lentils	60	Rice	75	Meat	97
Potatoes	68	Bread	81	Eggs	98
Peas	72	Cheese	96		

B.—Time Required for Digestion.

	Hours.	Min.		Hours.	Min.
Rice	1	0	Mutton boiled	3	0
Eggs raw	1	30	Beef roast	3	0
Apples	1	30	Bread fresh	3	15
Trout boiled	1	30	Carrots boiled	3	15
Venison broiled	1	35	Turnips „	3	30
Sago boiled	1	45	Potatoes „	3	30
Milk „	2	0	Butter	3	30
Bread stale	2	0	Cheese	3	30
Milk raw	2	15	Oysters stewed	3	30
Turkey boiled	2	25	Eggs hard	3	30
Goose roast	2	30	Pork boiled	3	30
Lamb broiled	2	30	Fowl roast	4	0
Potatoes baked	2	30	Beef fried	4	0
Beans boiled	2	30	Cabbage	4	30
Parsnips „	2	30	Wild fowl	4	30
Oysters raw	2	55	Pork roast	5	15
Eggs boiled	3	0	Veal roast	5	30

DISEASE.

A.—Causes of Death, England (1879).

Cause.	Male.	Female.	Total.
Zymotic	40,767	40,507	81,274
Constitutional	43,887	44,949	88,836
Local	135,202	124,454	259,656
Various	38,774	40,080	78,854
Violent	12,866	4,769	17,635
Total	271,496	254,759	526,255

B.—Deaths over 15 Years of Age.

Cause.	Male.	Female.	Total.
Zymotic	8,116	8,731	16,847
Constitutional	31,304	33,989	65,293
Local	84,296	83,863	168,159
Various	24,916	23,708	48,624
Total	148,632	150,291	298,923

Digitized by Google

C.—Decrease of Zymotic Mortality.

Period.	Annual Average.	Per Cent. of Deaths.
1838–40	61,807	17·7
1848–50	88,924	22·1
1858–60	79,930	17·6
1867–68	87,114	18·2
1879	81,274	15·5

D.—Alphabetical List of Diseases, England (1879).

	Number of Deaths.		Total.
	Male.	Female.	
Apoplexy	6,904	7,301	14,205
Asthma	1,298	950	2,248
Brain	1,768	1,424	3,192
Bright's disease	2,845	2,217	5,062
Bronchitis	35,595	35,824	71,419
Cancer	4,121	8,508	12,629
Childbirth	...	1,876	1,876
Convulsions	13,639	10,214	23,853
Croup	1,932	1,642	3,574
Debility	12,986	11,766	24,752
Diarrhœa	5,712	5,236	10,948
Diphtheria	1,340	1,530	2,870
Drink	614	314	928
Dropsy	942	1,415	2,357
Dysentery	291	224	515
Epilepsy	1,555	1,421	2,976
Erysipelas	990	834	1,824
Gout	515	167	682
Heart	15,134	16,957	32,091
Hydrocephalus	4,742	3,416	8,158
Hydrophobia	29	6	35
Jaundice	822	740	1,566
Liver	2,026	2,079	4,105
Measles	4,678	4,507	9,185
Old age	13,072	16,453	29,525
Paralysis	6,339	6,254	12,593
Phthisis	25,051	24,162	49,213
Pneumonia	15,721	11,453	27,174
Rheumatism	1,032	1,027	2,059
Scarlatina	9,148	8,465	17,613
Scrofula	1,543	1,392	2,935
Smallpox	283	253	536
Syphilis	1,053	976	2,029
Teething	2,392	1,864	4,256
Typhoid	2,920	2,940	5,860
Typhus	304	229	533
Whooping-cough	5,804	6,948	12,752

Digitized by Google

E.—Diseases and Ratio in Deaths.

	Deaths, Thousands.	Ratio.		Deaths, Thousands.	Ratio.
Bronchitis . .	71·4	13·6	Convulsions . .	23·9	4·5
Phthisis . . .	51·3	9·8	Scarlatina . .	17·6	3·3
Heart	36·1	6·9	Apoplexy . . .	14·2	2·7
Old age . . .	29·5	5·6	Cancer . . .	12·8	2·4
Pneumonia . .	27·2	5·2	Paralysis . . .	12·7	2·4
Debility . . .	24·7	4·7	Various . . .	205·1	38·9

See *Phthisis.*

F.—Sickness in Ireland (Census).

	Sick, per 10,000 Inhabitants.			
Diseases.	1851.	1861.	1871.	Medium.
Zymotic . .	53	17	9	26
Brain . .	37	50	58	48
Respiratory .	16	16	17	16
Various . .	53	48	48	50
Total . .	159	131	132	140

G.—Causes of Death, per Million Inhabitants.

	England, Yearly Ratio.				Scotland.	Ireland.
	1850-59.	1860-69.	1870-79.	1879.	1877.	1880.
Apoplexy . .	451	483	540	566	507	189
Asthma . . .	248	186	132	114	96	63
Brain disease .	202	253	267	288	315	208
Bronchitis . .	1,185	1,749	2,295	2,847	2,525	2,164
Cancer . . .	315	387	470	511	451	341
Childbirth . .	114	112	98	75	108	105
Consumption .	2,730	2,547	2,205	2,044	2,294	2,135
Diarrhœa . .	853	871	895	435	421	456
Dropsy . . .	501	348	187	130	116	184
Heart disease .	703	975	1,242	1,439	1,299	781
Hydrocephalus .	410	358	321	325	546	223
Liver disease .	213	252	280	275	224	182
Measles . . .	409	465	369	866	281	197
Paralysis . . .	452	499	515	508	560	267
Pneumonia . .	1,265	1,135	1,025	1,083	865	434
Scarlatina . .	996	890	805	701	379	470
Scrofula . . .	149	148	125	133	203	187
Smallpox . . .	240	169	258	21	11	75
Typhus . . .	945	890	410	257	466	388
Violent deaths .	744	784	750	703	799	379
Whooping-cough	512	529	517	507	432	455

Digitized by Google

H.—CAUSES OF DEATH IN LONDON.

	Per Million Inhabitants.				Rate for England (1870–79).
	1859.	1869.	1879.	Medium.	
Bronchitis . . .	2,310	2,995	3,622	2,977	2,295
Childbirth . . .	93	79	48	73	98
Consumption . .	2,850	2,756	2,476	2,692	2,205
Diarrhœa . . .	1,210	1,061	495	923	895
Fever	657	558	249	488	410
Measles	488	455	670	537	369
Scarlatina . . .	1,280	1,825	719	1,273	805
Smallpox	425	86	122	211	258
Violent deaths . .	752	747	774	760	750
Whooping-cough .	639	1,178	792	870	517

I.—DISEASES IN UNITED STATES (1880).

Cause of Death.	Number.	Per Million Inhabitants.	Ratio.
Whooping-cough . . .	11,202	224	1·5
Scarlet fever	16,416	328	2·1
Typhoid „	22,905	458	3·1
Digestive diseases . . .	34,094	682	4·5
Diphtheria	38,398	768	5·1
Diarrhœa	65,565	1,311	8·7
Nervous diseases . . .	83,670	1,674	11·1
Consumption . . .	91,551	1,831	12·2
Respiratory affections . .	107,904	2,158	14·4
Various	285,188	5,704	37·3
Total	756,893	15,138	100·0

It is supposed that 15 per cent. of all deaths escaped the notice of enumerators, and that the real death-rate in 1880 was 17·8 per 1000, instead of 15·1 as given above. Consumption carried off, as compared with England, thus:—

	United States.		England.	
	Males.	Females.	Males.	Females.
Per 100 deaths . .	10½	14	9	9½
Per 10,000 inhabitants .	18	23	19	19

DISPENSARIES.—Medical relief was given gratis to 972,000 persons in England and Wales in 1879. The sum spent on dispensaries in Ireland is £150,000 per annum. In France 230,000 persons annually receive medicine gratis at a cost of £58,000.

Digitized by Google

DISTANCES.

A.—Ocean Routes.

Nautical Miles, 6 = 7 English.

Aden—Mauritius	2,822	London—Madras	7,330
Alexandria—Southampton	2,960	,, Singapore	8,345
Amoor River—S. Francisco	3,946	Madeira—Plymouth	1,200
Ascension—Cape Horn	3,800	Madras—London	7,330
Auckland—Panama	6,490	Mauritius—Aden	2,822
Azores—Portsmouth	1,390	,, Bombay	2,503
Bahia—Southampton	4,366	,, Melbourne	4,570
Batavia—Sydney	3,870	Melbourne—Calcutta	5,230
Behring's Sts.—S. Francisco	2,720	,, Liverpool	11,555
Bermuda—Southampton	2,973	,, Mauritius	4,570
Bombay—Cape of G. Hope	4,527	Montevideo—Falmouth	5,886
Bombay—Mauritius	2,503	New York—Galway	2,731
,, Melbourne	5,530	,, Glasgow	3,400
,, London	6,330	,, Havanna	1,190
Boston—Galway	2,385	,, Liverpool	2,980
Calcutta—London	7,950	,, Portsmouth	3,075
,, Melbourne	5,230	,, Southampton	3,080
,, Suez	4,580	Pernambuco—Teneriffe	2,450
Cape of G. Hope—Calcutta	5,381	Plymouth—Fernando Po	4,130
,, Bombay	4,527	,, Madeira	1,200
,, Java	5,025	Portsmouth—Azores	1,390
,, Liverpool	5,998	,, Havanna	4,029
Cape Horn—Ascension	3,800	,, Jamaica	4,050
,, Liverpool	7,325	,, New York	3,075
,, Sydney	5,470	,, St. Helena	4,330
Demerara—London	4,030	,, Tahiti	11,530
Fernando Po—Plymouth	4,130	Quebec—Galway	2,392
Galway—Boston	2,385	,, Liverpool	2,634
Gibraltar—Southampton	1,160	Rio Janeiro—Southampton	5,060
Glasgow—New York	3,400	St. Helena—Portsmouth	4,330
Halifax—Galway	2,165	St. Thomas—Southampton	3,570
Havanna—New York	1,190	St. Vincent—Pernambuco	1,608
,, Portsmouth	4,029	,, Teneriffe	850
Hong Kong—Honolulu	4,838	San Francisco—Amoor	3,946
Honolulu—Callao	5,145	,, Behring's Sts.	2,720
,, San Francisco	2,081	,, Honolulu	2,081
,, Tahiti	2,378	,, Panama	3,150
,, Valparaiso	5,902	Shanghai—Sydney	4,640
Jamaica—Portsmouth	4,050	Singapore—London	8,345
Java—Cape of Good Hope	5,025	Suez—Calcutta	4,580
Liverpool—Cape of G. Hope	5,998	Sydney—Batavia	3,870
,, Cape Horn	7,325	,, Cape Horn	5,470
,, Melbourne	11,555	,, Shanghai	4,640
,, New York	2,980	,, Valparaiso	6,198
,, Portland	2,770	Tahiti—Honolulu	2,378
,, Quebec	2,634	,, Portsmouth	11,530
Lisbon—Madeira	535	Teneriffe—Pernambuco	2,450
London—Bombay	6,330	Valparaiso—Honolulu	5,902
,, Calcutta	7,950	,, Tahiti	4,233
,, Demerara	4,030	,, Sydney	6,198

Digitized by Google

B.—From London, Bird's Flight, English Miles.

Algiers	1,050	Falklands	8,150	Montreal	3,340
Amsterdam	210	Florence	730	Moscow	1,580
Astrakan	2,180	Frankfort	400	Naples	1,000
Azores	1,680	Geneva	460	Natal	5,850
Barcelona	680	Genoa	650	New Orleans	4,820
Belgrade	1,040	Gibraltar	1,100	New York	3,620
Berlin	580	Halifax	2,940	Palermo	1,150
Bordeaux	460	Hamburg	450	Paris	200
Boston	3,190	Havanna	4,700	Pekin	5,400
Bremen	390	Hong-Kong	6,040	Philadelphia	3,700
Brussels	190	Honolulu	8,430	Quebec	3,200
Bucharest	1,270	Iceland	1,060	Quito	6,500
Buda-Pesth	900	Jamaica	4,800	Rio Janeiro	6,000
Buenos Ayres	7,260	Jersey	170	Rome	900
Cadiz	1,080	Jerusalem	2,100	San Francisco	6,000
Cairo	2,160	Lima	6,900	St. Petersburg	1,380
Calcutta	4,870	Lisbon	980	Sierra Leone	3,300
Canton	5,960	Madeira	1,600	Singapore	7,050
Cape-town	5,950	Madras	5,170	Stockholm	910
Chicago	4,050	Madrid	780	Sydney	10,120
Colombo	5,370	Malta	1,260	Teneriffe	2,080
Constantinople	1,540	Manilla	6,700	Utah	5,500
Copenhagen	600	Marseilles	620	Valparaiso	7,850
Cyprus	1,980	Mauritius	6,010	Vienna	760
Dresden	600	Melbourne	9,990	Warsaw	910
Dublin	280	Mexico	5,800	Washington	3,800
Edinburgh	300	Montevideo	7,150	Yeddo	6,600

DIVORCES.

A.—Divorces and Separations.

	Per Million Inhabitants.		Per 1000 Marriages.	
	1870.	1880.	1870.	1880.
England	8	15	1	2
Scotland	8	21	1	3
France	33	71	4	9
Germany	...	130	...	17
Russia	11	13	1½	2
Austria	70	91	8	10
Italy	21	22	3	3
Belgium	22	52	3	7
Holland	42	55	5	8
Switzerland	...	370	...	51
Denmark	170	202	25	30
Sweden	35	47	5	7
Norway	3	5	½	¾
Roumania	55	82	7	10
U. States (Mass.)	210	360	21	45

Digitized by Google

In France 38 per cent. of divorced couples had no children. 52 per cent. were married over 10 years.

In Switzerland for every 1000 marriages there were 13 divorces in Catholic cantons, 59 in Protestant, and 51 in mixed; general average, 50 per 1000.

In Austria the mixed provinces had 12 times more divorces to population, the Protestant 28 times more, than in Catholic provinces.

In England 116 divorced persons were married in 1880; in Switzerland 775 the same year. The rate of suicide has risen in all countries in which divorces increased.

B.—Divorces in Belgium.

Per 1000 Marriages (1878).

Antwerp	3·0	Brussels	14·7
Ghent	3·5	Liège	15·0

In Belgium the ratio of divorces per 1000 marriages is 5 times higher than in 1840, and 4 times than in 1850.

C.—Marriage of Divorced Persons.

Per 1000 Marriages.

	Men.	Women.	Total.
England	0·7	0·5	0·6
Holland	1·0	0·8	0·9
Hungary	1·2	1·0	1·1
Prussia	2·2	2·4	2·3
Denmark	3·2	3·2	3·2
Switzerland	6·0	4·2	5·1

The number of divorced persons marrying in England has increased twelve-fold since 1861, and three-fold since 1870.

D.—Relative Increase of Divorces (Kummer).

	1851–55.	1856–60.	1861–65.	1866–70.	1871–75.	1876–80.
France	100	128	150	190	163	225
Belgium	100	140	160	190	280	420
Holland	100	100	112	115	139	151
Saxony	100	83	75	72	80	105
Sweden	100	98	109	113	132	161

E.—Ratio in Cities.

Number of Divorces, per 1000 Marriages.

Christiania	2	Hague	11	Paris	25
Prague	2	Liège	12	Stockholm	28
Antwerp	3	Brussels	14	Copenhagen	29
Ghent	3	Munich	15	Breslau	31
London	4	Frankfort	17	Bucharest	44
Cologne	6	Rotterdam	20	Boston	73
Berlin	10	Vienna	23	San Francisco	223

Digitized by Google

F.—Increase in France and Belgium.

Divorces, per 1000 Marriages.

Period.	France.	Paris.	Belgium.	Brussels.
1826–30 . . .	1·1	4·0	1·0	4·1
1831–40 . . .	1·8	7·0	1·2	5·3
1841–50 . . .	3·8	9·9	1·4	6·6
1851–60 . . .	4·3	15·6	2·4	9·9
1861–70 . . .	5·6	22·9	2·9	11·2
1871–78 . . .	6·3	24·9	5·1	12·4

G.—Divorce and Suicide Compared.

	Divorces, per 1000 Marriages.	Suicides, per 100,000 Inhab.		Divorces, per 1000 Marriages.	Suicides, per 100,000 Inhab.
Ireland . .	1	1·7	Germany .	17	14·3
England . .	2	6·7	Denmark .	30	28·2
Scotland . .	3	4·0	Switzerland	51	20·2
Russia . .	2	2·5	London . .	4	8·6
Italy . . .	3	3·7	Berlin . .	10	17·0
Sweden . .	7	8·1	Brussels .	14	27·1
Belgium . .	7	7·1	Vienna . .	23	28·7
Holland . .	8	9·6	Paris . .	25	42·2
France . .	9	15·6	Stockholm .	28	35·4
Austria . .	10	9·6	Copenhagen	29	30·2

DOCKS.—Those of London comprise 690, those of Liverpool 543, those of Cardiff 113 acres.

Cost in Millions £.

London . . .	20·1	Antwerp . . .	6·5	Hull	1·2
Liverpool . .	18·2	Cherbourg . .	3·5	Bristol	0·9
Glasgow . . .	7·6	Holyhead . .	2·0	Dundee . . .	0·8

The new docks at Hamburg will cost 5½ millions sterling.

Dock-dues as a rule average 2 shillings a ton in European ports, the charges on a vessel of 1000 tons being as follows:—

Liverpool. . .	£133	Hamburg . .	£110	Amsterdam . .	£81
London . . .	125	Antwerp . .	93	General average	100

The largest lock in the world is that of Cardiff, 600 feet long by 80 in width, ordinary depth of water 36 feet.

DOGS.

A.—Dogs of all Kinds.

	Number Licensed.	Per 1000 Inhabitants.
Great Britain	1,128,000	38
Ireland	868,000	73
France	1,864,000	49
Germany	1,432,000	31

Digitized by Google

Sheep-dogs are not taxed in the United Kingdom, and the total number of dogs in the kingdom is at least 2,000,000, say 55 per 1000 inhabitants, worth £800,000. It is found that 100 male dogs go mad, as compared with 14 female. A dog accidentally locked up at Metz passed 39 days without food, and recovered.

B.—HUNTING-DOGS IN UNITED KINGDOM.

	England.	Ireland.	Scotland.	U. Kingdom.
Stag-hounds . .	604	246	...	850
Fox-hounds . .	12,866	1,522	660	15,048
Harriers . .	3,258	1,516	...	4,774
Beagles . . .	448	...	74	522
Total . .	17,176	3,284	734	21,194

C.—BRAIN OF DOGS, IN DRAMS.

Sheep-dog . .	29·5	Retriever . .	25·7	Greyhound . .	23·4
Fox-hound . .	29·2	Collie . . .	25·4	Terrier . . .	20·0
Setter . . .	26·1	Bull-dog . .	24·0	Spaniel . . .	18·1
Mastiff . . .	26·1	Newfoundland	24·0	Lap-dog . . .	18·0

As compared with the above, the wolf has 42, the jackal 15, the fox 13 drams.

DRAINAGE.—Subsoil drainage in England costs on an average £5 per acre, and produces 5 bushels more wheat, say 20 per cent. extra. Reclaiming land in Scotland costs about £17 per acre.

For drainage of towns, see *Sewers.*

DRINK.

A.—CONSUMPTION IN UNITED KINGDOM.

	Millions of Gallons.			
Year.	Beer.	Spirits.	Wine.	Equivalent in Alcohol.
1840	640	25·7	6·5	44·3
1860	770	27·2	7·5	49·9
1871	980	33·6	16·1	63·9
1881	1,007	37·0	15·6	67·2

B.—CONSUMPTION PER INHABITANT.

	Gallons.			
Year.	Beer.	Spirits.	Wine.	Equivalent in Alcohol.
1840	24·2	0·97	0·25	1·64
1860	26·5	0·93	0·26	1·72
1871	30·6	1·06	0·51	2·02
1881	28·6	1·05	0·44	1·92

Digitized by Google

C.—Consumption in Three Kingdoms (1881).

	Gallons per Inhabitant.		
	Beer.	Spirits.	Equivalent in Alcohol.
England . . .	34·8	0·85	2·05
Scotland . . .	10·5	2·22	1·80
Ireland . . .	12·1	1·29	1·32
United Kingdom .	28·6	1·05	1·92

D.—Expenditure in Drink.

	United Kingdom.	Per Inhabitant.
Beer	£62,800,000	£1 16 0
British spirits . .	21,500,000	0 12 4
Imported „ . .	6,300,000	0 3 6
Wine	6,900,000	0 3 10
Cider, &c. . . .	1,200,000	0 0 9
Total . . .	£98,700,000	£2 16 5

E.—Drink of all Nations.

	Millions of Gallons.				Alcohol, Gallons per Inhab.
	Wine.	Beer.	Spirits.	Equivalent in Alcohol.	
United Kingdom .	15	1,007	37	67·2	1·92
France	760	190	34	101·0	2·65
Germany	120	880	60	72·4	1·60
Russia	30	63	145	80·6	1·05
Austria	300	245	30	53·0	1·45
Italy	480	20	10	50·2	1·76
Spain	220	2	3	24·0	1·48
Portugal	60	1	1	7·0	1·55
Holland	3	35	12	8·2	2·05
Belgium	4	170	10	11·4	2·07
Denmark	1	25	8	5·1	2·60
Sweden and Norway	2	35	27	15·4	2·27
Europe . . .	1,995	2,673	377	495·5	1·65
United States . .	30	440	76	66·5	1·31
Colonies, &c. . .	108	81	20	25·2	1·80
The World . .	2,133	3,194	473	587·2	1·70

F.—Insanity from Drink.

Ratio of Dipsomaniacs to all Insane.

Italy . .	12 per cent.	United States	26 per cent.
France . .	21 „	Scotland .	28 „

Digitized by Google

DROWNED, ACCIDENTALLY.

A.

	Number Drowned.	Per 1000 Deaths.
England	3,690	5·5
Scotland	550	7·5
Ireland	325	3·1
United Kingdom	4,565	6·5
France	5,170	6·2
United States	4,320	5·8

The above is in internal waters only.

B.—Ratio of Sex Drowned.

	Males.	Females.
United Kingdom	76	24
France	82	18

C.—Accidentally Drowned in England (1879).

Boating	156	Skating	147
Bathing	190	Various	3,197
Total	3,690		

There were 1112 under 12 years of age. The number of drowning persons timely rescued by the Royal Humane Society was 136.

D.—Drowned in Royal Navy and British Merchant Service.

Period.	Men Drowned, per Annum.		Ratio per 1000 Afloat.	
	Royal Navy.	Merchant.	Royal Navy.	Merchant.
1866–70	172	2,740	3·6	14·0
1876–79	133	2,225	2·9	11·3

DRUNKENNESS.

A.—Relative Mortality of Drink.

Years of Intemperance to Produce Death.

Class.		Liquor.	
Women	14	Beer	22
Gentlemen	15	Spirits	17
Working class	18	Mixed	16

This shows that the working class can stand drink longest, and that beer is the least deadly form of intemperance.

Digitized by Google

B.—Deaths from Drink.

	Number.	Per 1000 Deaths of Population.
England	1,082	2·04
Scotland	230	3·29
Ireland	280	2·78
United Kingdom	1,592	2·27
France	872	1·05
Belgium	456	3·83
Sweden	502	6·25
Norway	72	2·36
Switzerland	244	3·81
Italy	709	0·85
New York	324	12·08
Total	4,771	1·81

C.—Value of Life, Drunk and Sober.

	Expectancy of Years.	
Age.	Drunk.	Sober.
20	15	44
30	14	36
40	11	29

D.—Intemperance in United Kingdom.

	Annual Result.		Annual Result.
Deaths	1,592	Sick	84,000
Insane	3,350	Loss of work	£7,400,000
Crimes	6,140	Extra taxes	£1,700,000

E.—Fined for Drunkenness, England.

Year.	Number.	Per 1000 Inhab.
1860	88,410	4·4
1870	137,200	6·0
1879	178,429	7·0
1881	174,481	6·7

In France 61,000 persons were fined for drunkenness in 1881, showing a decline.

F.—Drunkenness in Large Towns.

	Cases per Annum per 1000 Inhab.		Cases per Annum per 1000 Inhab.
London	5	Limerick	35
Leeds	7	Glasgow	38
Nottingham	9	Liverpool	42
Belfast	21	Dublin	43
Manchester	31	Cork	56

The ratio for London is not reliable, although numerically

Digitized by Google

correct, as the authorities no longer treat drunkenness in the metropolis as a misdemeanour unless attended with disorder.

DWARFS.

Name.	Height (Inches).	Date of Birth.	Birthplace.
Borowlaski . . .	39	1739	Warsaw.
Tom Thumb . .	31	1838	New York.
Mrs. T. Thumb . .	32	1842	,,
Che-Mah . . .	25	1838	China.
Lucia Zarate . .	20	1863	Mexico.
General Mite . .	21	1864	New York.

Count Borowlaski was a friend of George III., and one of the most accomplished men in London society. Tom Thumb's real name was Charles Stratton.

DWELLINGS FOR WORKING CLASSES.

City.	Built by	No. of Tenements.	Sum Spent.	Rent per Week.
London	Peabody.	2,790	£780,000	4/6
,, ...	Metrop. Assn.	900	241,000	6/
,, ...	Industrial Assn.	2,000	696,000	5/
Paris	Montmartre Co.	2,870	800,000	8/
Dublin	Corporation.	270	40,000	4/
Liverpool . . .	,,	146	68,000	6/
Glasgow	,,	400	90,000	6/
Birmingham . .	,,	700	1,500,000	14/
Salford	,,	230	50,000	5/
Greenock . . .	,,	...	115,000	...
Huddersfield . .	,,	100	...	...

Government loans for the above purposes amount to two millions, of which 90 per cent. are for English towns. In 1865 Mr. George Peabody gave £500,000 to erect in London suitable buildings for working men's families, at moderate rents. In January 1882 the buildings comprised 6160 rooms, in 2789 holdings, and were occupied by 11,460 persons, who paid an average rent of 2 shillings per room, or 4s. 6d. per family, weekly. The death-rate in 1881 was only 17 per 1000, or 4 per 1000 less than the London rate for same year. The average earnings of each family were 24 shillings, so that the rent came to be 18 per cent. of same. New tenements were opened in 1881 for 430 families, but the applicants exceeded 3000. The original fund of £500,000 now reaches £780,000, owing to profits: cost of management only £800 a year.

Digitized by Google

DYING.—The chances of dying within 12 months, at various ages, in England, are as follows:—

Age.	Chances, per Cent.	Age.	Chances, per Cent.	Age.	Chances, per Cent.	Age.	Chances, per Cent.
27	0·8	40	1·0	50	1·6	65	4·4
33	0·9	45	1·2	60	3·0	70	6·5

DYNAMITE.—Messrs. Nobel of Glasgow make 1200 tons yearly. See *Explosives.*

E

EARTHQUAKES.—Since the beginning of the 18th century the most destructive have been the following:—

Year.	Place.	Lives Lost.	Year.	Place.	Lives Lost.
1703	Yeddo	190,000	1773	Guatemala . .	33,000
1716	Algiers	18,000	1797	Quito	41,000
1726	Palermo . . .	6,000	1822	Aleppo	22,000
1731	Pekin	95,000	1861	Mendoza, S. Amer.	12,000
1754	Cairo	40,000	1868	Arica ,,	6,000
1755	Lisbon	35,000	1880	Manilla. . . .	3,000

EARTHWORKS.

	Cost, Cubic Yd.		Cost, Cubic Yd.
England . .	21 pence	Panama Canal .	15 pence
Suez Canal . .	12 ,,	Cyprus. . .	6 ,,

The earthwork of the Thames Embankment involved the filling in of one million cubic yards.

EDUCATION.

A.—Progress since 1830.

	Ratio of Adults able to Write.			Ratio of School Children to Population.		
	1830.	1850.	1881.	1830.	1850.	1881.
England . . .	55	64	84	7	8	15
Scotland . . .	77	83	88	9	10	15
Ireland . . .	46	55	67	5	6	18
France . . .	42	57	78	6	9	13
Germany . . .	81	86	94	16	16	17
Russia . . .	1	2	11	...	1	2
Austria . . .	28	34	49	5	6	9
Italy . . .	16	28	41	2	4	8
Spain and Portugal .	9	18	34	3	4	5
Switzerland . .	78	80	88	13	14	16
Belgium and Holland	41	62	86	10	11	15
Scandinavia . .	80	82	87	13	14	15
United States . .	80	84	90	15	17	18

Digitized by Google

The ratio of school children attending school is usually two-thirds of those enrolled (in Ireland less than half), so that the number of children at school compared to population is only 11 per cent. in England, 9 per cent. in France, and 12 per cent. in United States.

B.—Schools, Teachers, and Pupils.

	Thousands.		
	Schools.	Teachers.	Pupils.
United Kingdom	28	57	5,251
France	74	119	4,950
Germany	73	101	6,982
Russia	32	40	1,240
Austria	31	52	3,690
Italy	47	52	2,515
Spain	28	30	1,428
Switzerland	5	10	411
Belgium	6	12	690
Holland	4	7	490
Scandinavia	17	18	1,100
Roumania	2	4	110
Europe	347	502	28,857
United States	177	273	9,705
Canada	13	16	860
Australia	6	13	611
Argentine Republic	2	6	164
Brazil	6	8	188
Egypt	6	6	170
India	83	87	2,196
Japan	26	60	2,161
Total	660	963	44,724

C.—Education of United Kingdom.

	Schools.	Teachers.	Children.
England	17,614	41,406	2,751,300
Scotland	3,056	5,330	404,600
Ireland	7,590	10,674	468,550
United Kingdom	28,260	57,410	3,624,450

The above shows the average number of children attending school: Table B, the number on the rolls.

	Average Attendance.	Percentage Examined.	Passed in Three Highest Classes.	
			No.	Ratio.
England	75 per cent.	83	370,000	13½ per cent.
Scotland	72 „	87	82,000	21 „
Ireland	45 „	47	82,500	18 „

Digitized by Google

The last column shows the percentage of children on the rolls who passed the three highest classes. According to the Irish Census of 1881, the proportions of persons who could read and write were 54 per cent. among Catholics, 75 per cent. among Protestants, and 59 per cent. of the whole population, as against 49 per cent. in 1871.

D.—Annual School Funds and Outlay.

	Thousands.	Cost per Pupil.	Per Inhabitant.
United Kingdom .	£6,685	£1 17 0	£0 4 3
France . . .	3,200	0 12 0	0 1 6
Germany . . .	6,900	1 4 0	0 3 0
Russia . . .	1,000	0 17 0	0 0 3
Austria . . .	2,900	0 19 0	0 1 8
Italy	1,100	0 12 0	0 0 10
Spain . . .	1,200	0 15 0	0 1 6
Holland . . .	500	1 1 0	0 2 6
Belgium . . .	900	0 19 0	0 3 4
Scandinavia . .	500	0 9 0	0 1 3
Switzerland . .	200	0 10 0	0 1 6
Europe . .	£24,685	1 0 1	0 1 8
United States . .	16,830	1 15 0	0 6 6
Canada . . .	1,050	1 9 0	0 5 0
India . . .	1,280	0 1 3	0 0 2
Australia . . .	1,660	5 8 0	0 12 0
Argentine Republic .	350	2 2 0	0 3 2
Total . . .	£44,575	£1 0 0	£0 3 0

E.—School Expenditure, United Kingdom.

	Thousands £.				Cost per Pupil.
	Subsidy.	Fees.	Rates.	Total.	
England . .	2,130	1,432	1,486	5,048	£1 16 8
Scotland . .	847	252	239	838	2 1 6
Ireland . . .	658	141	...	799	1 14 0
U. Kingdom .	3,135	1,825	1,725	6,685	£1 17 2

The above does not include extraordinary sums for building, which are provided out of loans, the balance of such loans outstanding in January 1881 being £13,130,000.

Digitized by Google

F.—Religious Denominations, United Kingdom.

	School-children.	Percentage.	Cost per Head.
Church of England . .	1,539,700	42·8	£1 15 2
Presbyterian	527,400	14·6	2 0 10
Roman Catholic . . .	526,600	14·6	1 12 8
Various	1,030,300	28·0	1 18 10
Total	3,624,000	100·0	£1 17 2

G.—Schools in England and Wales.

	Number of Schools.	
	1871.	1881.
Voluntary	9,772	14,370
Board schools . . .	82	3,692
Total	9,854	18,062
	Average Attendance.	
	1871.	1881.
Voluntary . . .	1,327,000	2,008,000
Board schools . .	9,200	856,000
Total . . .	1,336,200	2,864,000

The average expenditure is 42 shillings per pupil in Board schools, and 35 shillings in voluntary.

H.—Instruction in United States (1880).

	Schools.	Teachers.	Pupils.
Colleges	364	4,240	69,010
Academies . . .	1,699	5,960	167,100
Law	49	...	3,019
Medicine	111	...	13,320
Deaf and dumb . .	53	...	6,390
Blind	30	...	2,213
Reformatories . .	67	...	14,220
Orphanages . . .	411	...	751,000
Public schools . .	177,100	272,700	9,705,100

Average Attendance at School (1880).

States.	Thousands.		Ratio Attending to	
	Scholars Enrolled.	Average Attendance.	School Pop., per Cent.	Total Pop., per Cent.
New England .	760	541	61	13½
Middle	2,390	1,417	40	11½
South	2,297	1,509	33	10
West	4,052	2,449	42	14
Pacific	206	133	46	11
The Union . .	9,705	6,049	40	12

Digitized by Google

Expenditure on Public Schools (1880).

States.	Amount.	Ratio per Inhabitant.	Per Pupil, Average Attending.
New England .	£1,908,000	£0 9 6	£3 12 0
Middle . .	4,563,000	0 6 9	3 5 6
South . . .	1,479,000	0 2 0	0 19 6
West . . .	7,952,000	0 9 6	3 5 8
Pacific . .	683,000	0 10 9	5 3 0
The Union .	£16,585,000	£0 6 6	£2 15 0

This expenditure is merely on primary schools, in salaries, books, and other ordinary outlay.

I.—Instruction in France.

	Lay.	Clerical.	Total.
Schools . .	53,800	19,964	73,764
Teachers . .	70,410	49,150	119,560
Pupils . .	3,145,000	1,805,000	4,950,000
	Male.	**Female.**	**Total.**
Schools . .	43,494	30,270	73,764
Teachers . .	55,130	64,430	119,560
Pupils . .	2,519,000	2,431,000	4,950,000

Of the total number of pupils 58 per cent. are free, and 42 per cent. pay for their education.

K.—Instruction in Germany (1871).

	Schools.	Teachers.	Pupils.	Pupils to Population, per Cent.
Prussia . .	34,988	57,936	4,008,000	16
Bavaria . .	7,184	11,921	841,000	17
Saxony . .	2,134	7,219	451,000	16
Baden . .	1,957	3,603	245,000	16
Other States	6,540	11,320	784,000	15½
Total . .	52,803	91,999	6,329,000	16

L.—Instruction in Italy.

Pupils.	Public.	Private.	Total.
Boys . . .	1,049,000	63,000	1,112,000
Girls . . .	853,000	92,000	945,000
Total . .	1,902,000	155,000	2,057,000

Besides the above there are 456,000 persons attending night-schools, and 11,140 at universities. The ratio of children attending school to population is 11½ per cent. in the North, 6½ in Central Italy, 5½ in Naples, and 4½ per cent. in Sicily.

Digitized by Google

M.—Instruction in India.

	Schools.	Pupils.
Government . . .	16,649	769,000
Assisted	50,207	1,112,000
Voluntary	15,705	315,000
Total	82,561	2,196,000

The State expenditure on schools is £1,280,000 per annum, or 16 pence per pupil.

N.—Instruction in Canada (1879).

	Schools.	Teachers.	Pupils.
Ontario . . .	5,123	6,596	487,000
Quebec . . .	4,282	6,132	239,000
Nova Scotia . .	1,935	2,011	84,000
New Brunswick .	1,395	1,500	54,000
British Columbia .	51	58	2,000
Total. . .	12,786	16,297	866,000

O.—Instruction in Australia (1880).

	Schools.	Teachers.	Pupils.		Expenditure.
			Enrolled.	Average Attendance.	
N. South Wales	1,910	3,393	169,000	72,000	£475,000
Victoria. . .	2,430	4,950	269,000	120,000	553,000
New Zealand .	836	2,681	84,000	63,000	384,000
South Australia	370	837	36,000	20,000	87,000
Queensland .	338	924	43,000	24,000	124,000
Tasmania . .	171	323	12,000	8,000	24,000
West Australia	102	108	5,000	3,000	10,000
Total . . .	6,157	13,216	618,000	311,000	£1,657,000

EGGS.

A.

	Millions per Annum.		Annual Consumption per Inhabitant.
	Production.	Consumption.	
United Kingdom .	2,150	2,920	85
France . . .	4,330	3,920	105
Germany . . .	3,600	3,600	80
Italy	1,840	1,330	48

Hen-eggs range from 72 to 80 per cent. of the total in the above countries: they average a little under 2 ounces in weight, say 20,000 per ton. The United Kingdom imports 22 eggs per inhabitant yearly, as against 14 in 1870.

Digitized by Google

B.—Exporting Countries.

Year.	Millions Eggs Yearly.			Value (Thousands Omitted).		
	France.	Italy.	Canada.	France.	Italy.	Canada.
1861 . .	264	42	12	£710	£67	£19
1865 . .	602	40	9	1,500	63	20
1870 . .	499	129	31	1,250	206	65
1875 . .	688	182	47	1,860	344	106
1880 . .	428	502	109	1,202	1,450	230

C.—Imports into United Kingdom.

Year.	Millions.	Per Inhab.	Year.	Millions.	Per Inhab.
1853 . . .	123	4½	1870 . . .	431	14
1860 . . .	168	6	1875 . . .	741	23
1865 . . .	364	12	1881 . . .	757	22

ELECTORS.

A.—Number per 1000 Inhabitants.

	Enrolled.	Voted.		Enrolled.	Voted.
United Kingdom .	88	...	Switzerland . .	242	...
France	263	158	Italy	22	14
Germany	202	120	Portugal . . .	54	36
Austria	59	40	Belgium	18	13

B.—Electors in United Kingdom.

	Thousands.			Per 1000 Inhabitants.		
	1835.	1871.	1881.	1835.	1871.	1881.
England . .	668	2,066	2,538	45	90	98
Scotland . .	73	260	310	29	79	83
Ireland . .	98	227	229	12	41	44
U. Kingdom	839	2,553	3,077	33	81	88

	Thousands.			
	County.	Borough.	University.	Total.
England . .	933	1,592	13	2,538
Scotland . .	97	201	12	310
Ireland . . .	168	57	4	229
U. Kingdom .	1,198	1,850	29	3,077

The cost of a general election is £636,000 in England, £38,000 in Scotland, and £70,000 in Ireland; in all, £744,000.

Digitized by Google

C.—Borough Franchise, United Kingdom.

	Electors (Thousands).	Percentage of Pop.		Electors (Thousands).	Percentage of Pop.
Belfast . .	22	12	Hull . .	27	18
Birmingham	64	16	Leeds . .	50	16
Bolton . .	15	14	Liverpool .	62	11
Bradford . .	27	15	London .	329	9
Brighton . .	16	15	Manchester	75	14
Bristol . .	26	13	Newcastle.	25	17
Dublin . .	14	4	Nottingham	19	10
Dundee . .	16	13	Oldham .	22	20
Edinburgh .	29	13	Sheffield .	43	15
Glasgow . .	60	12	Sunderland	17	15

D.—Representation of United Kingdom.

	Representation.	Revenue.	Population.
England . . .	75·0	77·1	74·6
Scotland . . .	9·2	12·4	10·7
Ireland . . .	15·8	10·5	14·7
United Kingdom .	100·0	100·0	100·0

E.—Voters in France, August 1881.

Class.	Thousands.	Per Cent.
Republicans	4,570	45·7
Orleanists	1,103	11·1
Bonapartists	538	5·4
Not voted	3,740	37·8
Total . . .	9,951	100·0

ELECTRIC LIGHT.

A.—Greatest Lights.

	Candle Power.
Electric moon, San Josè, California . . .	24,000
Chandelier, Crystal Palace	3,000
Chandelier, Palais d'Industrie, Paris . . .	150,000
Marseilles Lighthouse	40,000
Sydney Lighthouse	180,000

B.—Lane-Fox System.

Horse Power.	Lights.	Candle Power.	Aggregate Candle Power.
3	36	10	360
5	30	20	600
8	40	25	1,000
20	60	40	2,400

Digitized by Google

C.—Brush System.

Engine 40 Horse Power.

Number of Lights.	Candle Power.	Aggregate Candle Power.
1	150,000	150,000
12	8,000	96,000
40	2,000	80,000
400	150	60,000

One engine of the above power feeds 400 lamps on a line of 30 miles, consuming 150 lbs. coal per hour, as compared with 1 ton per hour for gaslight over the same length.

D.—Cost of Jablochkoff Light.

Cost per Hour, 100 Candle Power.

Year.	Pence.	Year.	Pence.
1877	6	1880	2
1878	4	1881	1½
1879	3	1882	1

E.—Cost of Lighting.

Name.	Where.	Candle Power.	Pence per hour.
Siemens	British Museum	5,000	24
Brush	Kensington Museum	2,000	10
...	Marseilles	40,000	27
Jablochkoff	Thames Embankment	200	2
Arc light	Liverpool Docks	6,000	15
Swan	Nottingham	20	0¼

The San Josè electric moon stands on a tower 200 feet high, is worked by a 9-horse engine, and shows light for 2 miles around. The Sydney light is visible 50 miles, and has an intensity equal to 12 millions of candles, being the largest light yet made. The Marseilles light gives 6 times more light than the old system, at a saving of 9d. per hour. The Kensington Museum saves £235 a year by the change. The smallest lights are Swan and Edison's arc lights of 8 candle power for domestic use.

The contract with the Nottingham Municipality in May 1883 was for works and plant for supplying 60,000 Swan lamps of 20 candle power. The cost of instalment was £220,000, and after allowing for all expenses and interest on capital, the electric light would cost 40 per cent. less than gas, and give 40 per cent. more light.

Digitized by Google

ELECTRIC MOTOR.

1873. At the Vienna Exhibition a pump was worked at a distance of 1400 yards by means of an electric wire.

1879. At Sermaize, La Marne, a field of 6 acres was ploughed in 6 hours with a wire attached to a 12-horse engine a mile distant.

1881. At Oisiel a farmer named Meiner ploughed a large field by connecting an electric wire with a waterfall.

1882. Project to tap the force of Niagara, by constructing turbines, the power of water being estimated at 10 million cubic feet per second, or 8 million horse-power, and to transmit this force through the United States. Estimated value, £300,000 a day, or 108 millions sterling per annum. A copper wire, half-inch diameter and 300 miles long, would suffice to convey 30,000 horse-power from Niagara to New York.

1883. Four electric locomotives constructed by the New York Railway Company to do the work of 160 ordinary locomotives.

Tramcar at Kew, near London, running by electricity at 6 miles an hour, one accumulator of 80 lbs. sufficing for 7 hours' work: cost 6 shillings per day, against 26 shillings worked by horses.

ELEVATION OF CONTINENTS.

AVERAGE ABOVE SEA-LEVEL.

	Feet.		Feet.
Europe . . .	670	North America . .	1,150
Asia	1,140	South America . .	1,100

EMBANKMENT, THAMES.—Completed, after 8 years of work, in July 1869, at a cost of £1,710,000, the work consisting of—

	Cubic Yards.		Cubic Yards.
Brickwork . . .	80,000	Granite . . .	650,000
Concrete . . .	140,000	Earthwork . .	970,000

EMERALD.

Grains.	Value.	Grains.	Value.
5 . . .	£5	15 . . .	£50
10 . . .	20	24 . . .	100

Digitized by Google

EMIGRATION.

A.—Emigrants from Europe (1820–1882).

Nationality.	Thousands to			
	United States.	British Colonies.	South America.	Total.
British	5,377	3,116	77	8,570
Germans	4,384	162	68	4,614
Italians	114	13	581	708
Spanish and Portuguese	32	3	406	441
French	274	31	79	384
Scandinavians	632	15	16	663
Swiss	110	14	48	172
Various	815	498	268	1,581
Total	11,738	3,852	1,543	17,133

B.—Emigration of Ten Years (1872–81).

From	Emigrants (Thousands).	Percentage of Population.
United Kingdom	1,729	5·2
France	71	0·2
Germany	2,411	5·5
Russia	281	0·3
Italy	1,140	4·0
Denmark	38	2·0
Sweden	123	2·7
Norway	81	4·2
Switzerland	121	4·4
Total	5,995	3·0

C.—Emigration from Ireland.

Period.	Persons Evicted.	Emigrants.	Ratio of Emigrants to Evictions.
1849–60	1,865,000	1,551,000	81
1861–70	236,000	867,000	360
1871–82	311,000	712,000	230
33 years	2,412,000	3,130,000	130

Ratios of Emigrants.

Sex.		Age.		Destination.	
Males	53	Under 15	15	United States	74
Females	47	15 to 35	75	Colonies	14
	100	Over 35	10	England, &c.	12
			100		100

Digitized by Google

D.—British Emigration, Thirty Years.

	Emigrants (Thousands).			Ratio to Population.		
	1851–60.	1861–70.	1871–80.	1851–60.	1861–70.	1871–80.
England . . .	640	650	971	3·4	3·0	4·0
Scotland . . .	183	158	166	6·1	4·9	4·7
Ireland . . .	1,231	867	543	20·1	15·5	10·2
U. Kingdom .	2,054	1,675	1,679	7·3	5·5	4·8

To	Emigrants (Thousands).			
	1851–60.	1861–70.	1871–80.	30 Years.
United States . . .	1,257	1,185	1,088	3,530
Canada	222	136	178	536
Australia	494	272	303	1,069
Cape, &c. . . .	81	82	110	273
Total . . .	2,054	1,675	1,679	5,408

The above does not include foreigners who sailed from British ports. The net emigration for the decade ending 1880 was only 881,000, the number of returned emigrants (that is, of immigrants into the United Kingdom) amounting to 798,000 in the decade. The remittances by Irish settlers in the United States to their friends in Ireland between 1851 and 1881 amounted to 24½ millions sterling, including £1,510,000 in 1881. British emigrants in the 5 years ending 1880 averaged 24 per cent. cabin and 76 per cent. steerage passengers.

E.—Emigration from Italy (12 Years).

Year.	Number.	To	Ratio.
1870 . . .	111,000	France, &c. . .	44 per cent.
1871–80 . .	1,102,000	South America .	41 ,,
1881 . . .	136,000	Barbary, &c. .	15 ,,
12 years .	1,349,000		100 per cent.

F.—Arrivals in United States.

	Thousands.		Thousands.
1821–30 . . .	143	1861–70 . . .	2,493
1831–40 . . .	609	1871–80 . . .	2,731
1841–50 . . .	1,706	1881	669
1851–60 . . .	2,598	1882	789

Total for 62 years . . . 11,738,000 immigrants.

British and Germans averaged 60 males to 40 females, Spaniards and Italians 70 to 30 respectively.

Digitized by Google

G.—SETTLERS IN UNITED STATES (60 YEARS).

From	From 1820 to 1880 (Thousands Omitted).			Ratio of Survivors.	Ratio of Total.
	Arrived.	Died or Departed.	Living in 1880.		
				Per Cent.	Per Cent.
Ireland	3,538	1,423	2,115	60	33
England	1,105	595	510	48	8
Scotland . . .	195	48	147	75	3
United Kingdom .	4,838	2,066	2,772	57	44
Germans . . .	3,212	1,245	1,967	60	31
Canadians . . .	826	109	717	88	11
Scandinavians . .	427	51	376	88	6
French	345	238	107	31	2
Chinese	231	126	105	44	2
Various	402	120	282	70	4
Total . . .	10,281	3,955	6,326	61	100

Date.	From 1790 to 1880 (Thousands Omitted).			
	Immigration.	Died or Left.	Surviving.	Ratio of Survivors.
				Per Cent.
1800	50	6	44	88
1820	234	57	177	75
1840	986	127	859	86
1850	2,692	451	2,241	83
1860	5,290	1,154	4,136	78
1870	7,783	2,217	5,566	72
1880	10,515	4,180	6,335	60

The Census of 1880 gives 6,680,000 foreigners surviving, but this must be 345,000 too much, unless the German or Irish survivors be more than stated in the Census, as above.

ENCLOSURE OF LANDS.—In 120 years more than 10 million acres of waste land in the United Kingdom have been enclosed, viz. :—

Period.	Thousands of Acres.	
	Quantity.	Per Annum.
1760–1800	3,221	81
1801–1829	3,380	116
1830–1869	2,217	55
1870–1879	1,687	169
Total . . .	10,505	88

It is doubtful whether the reclaimed lands are now worth what they have cost.

Digitized by Google

ENCUMBERED ESTATES, IRELAND.—The first sale was on February 19, 1850. The sales have been :—

Years.	Acres (Thousands).	Millions £.	Price per Acre.
1850–60 . . .	2,820	25·2	£8 18 0
1861–70 . . .	1,300	15·6	12 0 0
1871–80 . . .	805	12·0	15 0 0
Total . .	4,925	52·8	£10 8 0

The lands were sold in 12,400 lots, averaging almost 400 acres each : the purchase-money represented 85 per cent. by Irish, and 15 per cent. Scotch or English buyers.

ENTRIES.—The following table does not include coast-traffic, but only the tonnage of sea-going vessels that entered the ports of the several countries, as follows :—

A.—TONNAGE OF PORT-ENTRIES.

	Tons (Thousands).			
	1850.	1860.	1870.	1880.
United Kingdom .	7,250	12,345	18,120	29,074
France	2,305	4,228	6,803	12,665
Germany	1,200	2,300	3,490	6,185
Russia	1,100	2,107	3,518	6,303
Austria	1,800	2,600	3,494	4,514
Italy	1,300	2,400	3,835	4,460
Spain	1,000	1,298	1,772	2,784
Holland	870	1,324	1,830	3,446
Belgium	800	1,000	1,535	3,545
Sweden and Norway	1,232	1,710	3,790	4,830
Denmark	400	700	710	2,050
Greece	800	1,000	1,270	1,790
Europe	20,057	33,012	50,167	81,646
United States . .	3,240	5,004	6,270	15,253
British Colonies .	7,300	10,880	15,200	28,260
The World . .	30,597	48,896	71,637	125,159

The entries of the world summed up in three items show these ratios :—

	1850.	1860.	1870.	1880.
Great Britain and Colonies .	47·7	47·3	46·6	45·8
United States . . .	10·6	10·2	8·8	12·2
Other countries . . .	41·7	42·5	44·6	42·0
Total	100·0	100·0	100·0	100·0

Digitized by Google

B.—Entries Compared with Commerce.

	Commerce, per Ton of Entries.			
	1850.	1860.	1870.	1880.
United Kingdom	£23	£26	£25	£20
France	60	44	35	26
Germany	95	70	61	51
Russia	36	27	30	20
Austria	17	20	24	29
Italy	24	19	19	22
Spain	15	18	17	15
Holland	50	42	39	35
Belgium	44	48	42	33
Scandinavia	12	13	9	8
Europe	32	30	28	24
United States	20	28	27	20
British Colonies	13	13	13	13
The World	27	26	25	21

The commerce for each country in the above table means the aggregate of imports and exports, without goods in transit.

C.—Tonnage Entries to Population.

	Tons per 100 Inhabitants.		Ratio of Steam Tonnage.	
	1860.	1880.	1865.	1880.
United Kingdom	42	83	32	66
France	11	33	41	65
Germany	7	14	40	56
Russia	3	8	...	70
Austria	8	12	47	84
Italy	11	15	44	69
Spain	9	17	...	...
Holland	40	85	45	72
Belgium	20	63	42	80
Sweden and Norway	33	75	12	37
Denmark	44	110	...	60
Greece	75	93	50	69
Europe	13	27	36	62
United States	17	30	26	50
British Colonies	7	12	...	...
The World	10	23	30	52

Digitized by Google

D.—TONNAGE ENTRIES OF UNITED KINGDOM.

Year.	Tons (Thousands).			Tons per 100 Inhabitants.
	Sea-going.	Coasting.	Total.	
1801 . . .	1,720	6,000	7,720	48
1810 . . .	2,070	7,000	9,070	51
1820 . . .	2,110	8,000	10,110	50
1830 . . .	2,940	8,240	11,180	46
1840 . . .	4,720	12,600	17,320	66
1850 . . .	7,252	21,510	28,762	105
1860 . . .	12,345	24,400	36,745	125
1870 . . .	18,320	28,850	47,170	151
1880 . . .	29,074	36,136	65,210	187

The Navigation Laws were repealed in 1849, since which date our shipping traffic has increased six times faster than population.

E.—SEA-GOING ENTRIES OF UNITED KINGDOM.

Year.	Tons (Thousands).			Ratio of British, per Cent.
	British.	Foreign.	Total.	
1840 . . .	3,245	1,475	4,720	69
1850 . . .	4,722	2,530	7,252	65
1860 . . .	6,957	5,387	12,345	56
1870 . . .	12,536	5,780	18,320	69
1880 . . .	20,674	8,690	29,364	70

The American flag stood for 12 per cent. in 1860, and for less than 2 per cent. in 1880.

F.—ENTRIES IN UNITED STATES PORTS.

Flag.	Tons (Thousands).			Percentage.		
	1860.	1870.	1881.	1860.	1870.	1881.
American . .	3,302	2,452	2,919	66	40	18
British . . .	1,263	2,792	8,458	25	45	54
German . . .	231	679	1,173	5	11	8
Scandinavian .	32	108	1,035	½	1½	7
Italian . . .	32	48	659	½	½	4
French . . .	24	81	305	½	1	2
Spanish . . .	63	31	277	1½	...	2
Various . . .	56	79	805	1	1	5
Total .	5,003	6,270	15,631	100	100	100

Digitized by Google

G.—Entries in French Ports.

Period.	Tons (Thousands Omitted).	Steam, Ratio, per Cent.	French Flag, per Cent.	Foreign Flags, per Cent.	Tons Entries per 100 Inhabitants.
1837–46 . . .	2,036	17	35	65	6
1847–56 . . .	2,822	23	39	61	8
1857–66 . . .	4,760	35	40	60	13
1867–76 . . .	7,450	54	33	67	20
1877–80 . . .	10,830	64	30	70	30

H.—Entries in British Colonies.

	Tons (Thousands).			Tons per 100 Inhab.		
	1860.	1870.	1880.	1860.	1870.	1880.
India	1,470	2,005	2,849	1	1	1½
Singapore . .	680	825	2,404	240	280	782
Ceylon . . .	395	712	1,453	20	33	59
Mauritius . .	302	230	271	97	70	75
Hong-Kong . .	778	1,320	3,039	650	960	1,870
Australia . .	1,483	2,121	4,276	105	107	150
S. Africa . .	287	210	1,005	75	40	75
Canada . . .	2,648	3,147	3,693	89	85	88
West Indies .	541	767	1,785	50	62	130
Gibraltar . .	982	1,478	3,222	6,000	7,000	16,000
Malta	929	1,492	3,074	700	1,050	2,000
Various . . .	415	922	1,190	...	...	...
Total .	10,910	15,229	28,261	7	8	12

The above does not include coasting trade.

I.—Australian Entries.

	Tons (Thousands).			Tons per 100 Inhab.		
	1860.	1870.	1880.	1860.	1870.	1880.
New S. Wales .	430	731	1,216	117	140	160
Victoria . . .	590	672	1,090	110	91	125
New Zealand .	140	270	410	140	160	85
S. Australia .	105	144	601	84	75	230
Queensland . .	42	130	628	120	108	95
Tasmania . .	117	106	206	130	104	91
W. Australia .	59	68	125	350	250	420
Total .	1,483	2,121	4,276	118	110	154

Digitized by Google

K.—ENTRIES INTO BRITISH PORTS IN 1880.

From	Thousands Omitted.		Value per Ton.	Cleared Tons (Thousands.)
	Tons Entries.	Value, Imports, (Millions £).		
United States . .	5,300	107	£20	3,700
France	2,050	42	21	3,500
Germany	1,700	24	14	2,600
Scandinavia . . .	2,500	16	6	1,900
Russia	1,700	16	9	1,400
Spain	1,900	11	6	800
Canada	1,600	13	8	900
Holland	1,300	26	20	1,400
India	1,100	30	27	1,800
Belgium	900	11	12	1,000
South America . .	600	15	25	1,200
Australia	500	26	52	600
Various	2,900	74	26	4,900
Total .	24,050	411	£17	25,700

The above includes only vessels with cargo. See *Ballast*, *Commerce*, &c.

ESTATES SOLD.—The sales of real property in London range from 7 to 10 millions sterling per annum. The sales of farm-lands in England, reported in the London newspapers, were as follows:—

Period.	Acres.	Price per Acre.
1860–61 . . .	71,360	£45 10 6
1870–71 . . .	43,276	41 11 0
1880–81 . . .	37,783	38 12 0

The above does not include Wales, nor any estates of ornamental or exceptional value.

EVICTIONS, IRELAND.

Years.	Thousands of Families.		
	Evicted.	Re-admitted.	Net Evictions.
1849–51 . . .	263	73	190
1852–60 . . .	110	28	82
1861–70 . . .	47	8	39
1871–80 . . .	41	6	35
1881–82 . . .	21	4	17
Total, 33 years .	482	119	363

The number of persons actually evicted was over 2 millions (say 70,000 per annum), about 35 per cent. of the population.

Digitized by Google

EXCHANGE.

A.—Principal Markets since 1840.

Period.	London on			Calcutta on London.	Price of Silver per Oz., Pence.
	Paris.	Hamburg.	Amsterdam.		
1841–50	25·76	13·12	12·1	23·1	59·8
1851–60	25·44	13·08	11·4	25·1	61·6
1861–70	25·46	13·09	11·6	24·3	60·5
1871–80	25·55	20·62	12·3	21·6	56·1
1881–82	25·53	20·67	12·5	19·9	51·7

B.—London on Paris since 1800.

Period.	Highest.	Lowest.	Average.	Date of Highest.	Date of Lowest.
1800–10 . .	25·2	19·6	22·4	1805	1809
1811–20 . .	26·1	17·6	22·0	1816	1811
1821–30 . .	25·9	25·2	25·6	1829	1824
1831–40 . .	25·9	25·2	25·5	1832	1831
1841–50 . .	26·7	24·9	25·8	1848	1850
1851–60 . .	25·5	24·9	25·4	1856	1851
1861–70 . .	25·5	25·0	25·4	1869	1869
1871–80 . .	26·9	25·2	25·6	1872	1874

EXCISE.

A.—British Excise since 1800.

	Millions £.	Per Inhab.		Millions £.	Per Inhab.
1801–11 . .	12·4	£0 14 6	1852–61 . .	18·1	£0 12 10
1812–31 . .	15·6	0 15 6	1862–71 . .	20·4	0 13 7
1832–41 . .	18·5	0 15 2	1872–81 . .	26·8	0 16 3
1842–51 . .	15·1	0 11 4			

B.—Incidence of Excise.

Class.	Amount (Thousands £).				Per Inhabitant.	
	Spirits.	Beer.	Sundries.	Total.	Liquor.	Total.
Affluent .	520	280	820	1,620	£0 14 0	£1 8 2
Middle .	4,490	2,240	2,580	9,310	0 14 1	0 19 6
Working .	9,264	6,010	970	16,244	0 12 8	0 13 5
Total .	14,274	8,530	4,370	27,174	£0 13 0	£0 15 6

For other countries, see *Liquor Duties.*

Digitized by Google

EXECUTIONS.—The largest number was in the reign of Henry VIII., in which period 71,400 persons were hanged or beheaded: in one year 300 beggars were executed for soliciting alms. In the first half of the present century 2734 persons were executed in England and Wales:—

For murder	616
„ burglary	1,235
„ incendiarism	147
„ forgery, &c.	736
Total	2,734

Years.	Executed.	Per Annum.
1801–20	1,697	85
1821–30	672	67
1831–50	365	18
Total . . .	2,734	

In one year (1820) no fewer than 46 persons were hanged for forging Bank of England notes, some of which were afterwards asserted to be good. In 20 years ending 1880 there were 279 criminals executed for murder in the United Kingdom, say 14 yearly.

Capital punishment was abolished in Italy in 1875; murders increased 42 per cent. The Swiss Convention of 1881 reformed the constitution so as to permit the cantons to restore the use of capital punishment.

Between January 1879 and December 1882 there were in France 90 assassins condemned to death, but only 10 were executed.

In India the average number of executions is 710 yearly.

EXHIBITIONS.

Date.	Place.	Area (Acres).	Visitors (Millions).	Days Open.	Receipts (Thousands).	Per Visitor (Pence).
1851 .	London . .	21	6·2	141	£424	16
1855 .	Paris . . .	24	4·5	200	128	7
1862 .	London . .	23	6·2	171	408	16
1867 .	Paris . . .	37	9·3	217	420	11
1873 .	Vienna . .	48	7·3	186	206	7
1876 .	Philadelphia	55	10·2	...	...	...
1878 .	Paris . . .	60	16·1	194	974	15

EXPLOSIONS.

Date.	Place.	Killed.	Date.	Place.	Killed.
1654 . .	Gravelines	3,000	1837 . .	Bona, Algeria	320
1769 . .	Brescia	2,800	1854 . .	Newcastle	100
1794 . .	Grenelle	2,700	1864 . .	Retiro, B. Ayres	440

Digitized by Google

EXPORTS.

A.—All Nations.

	Millions £.			Shillings per Inhabitant.		
	1860.	1870.	1882.	1860.	1870.	1882.
United Kingdom .	136	200	241	91	127	137
France	91	112	144	50	60	76
Germany	75	110	149	42	55	66
Russia	21	43	48	6	11	11
Austria	26	40	72	15	23	39
Italy	19	30	47	18	24	33
Spain	11	16	22	14	20	27
Portugal	4	5	6	20	23	27
Belgium	19	28	52	84	112	190
Holland	20	32	59	110	168	295
Denmark	7	9	8	95	100	82
Sweden and Norway	8	13	15	30	43	47
Greece	1	1	3	15	15	34
Europe	438	639	866	33	44	57
United States . .	66	68	153	42	35	59
Canada	11	17	21	67	85	96
Australia	22	28	50	325	280	350
Cape Colony . .	2	3	9	96	90	176
India	29	54	75	4	7	7
China	18	21	23	...	...	...
Egypt	8	16	14	60	80	62
West India (British)	4	5	6	82	95	96
Brazil	7	18	24	18	39	52
Argentine Republic .	5	8	13	62	83	104
Chili	4	6	9	38	45	63
Total	614	883	1,263	...	...	...

In some cases 1882 stands for the latest year of which returns are available.

B.—British Exports, Annual Value.

Year.	Thousands £.	Per Inhab.	Year.	Thousands £.	Per Inhab.
1355 . .	294	£0 2 6	1800–5 .	37,992	£2 7 0
1573 . .	1,880	0 8 2	1830–50 .	51,220	2 1 0
1614 . .	2,091	0 8 3	1851–60 .	107,150	3 16 0
1687 . .	4,087	0 15 1	1861–70 .	166,340	5 10 6
1700–5 .	6,476	1 8 0	1871–80 .	221,190	6 12 0
1750–80	13,420	1 19 0	1882 . .	241,060	6 17 0

Digitized by Google

C.—Components of Export Trade.

	Millions £.			Aliquot Parts.		
	1860.	1870.	1880.	1860.	1870.	1880.
Cotton goods . . .	52·0	71·4	75·6	38·2	35·8	33·9
Woollen goods . .	16·0	26·6	20·6	11·8	13·3	9·2
Linen and jute . .	6·6	10·4	9·3	4·9	5·2	4·1
Silk	2·4	2·6	2·7	1·8	1·3	1·2
Textiles . . .	77·0	111·0	108·2	56·7	55·6	48·4
Iron	12·4	26·5	29·7	9·1	13·3	13·3
Machinery	3·8	5·3	9·2	2·8	2·7	4·1
Cutlery	5·3	6·4	5·5	3·9	3·2	2·5
Metals	5·6	4·7	4·8	4·1	2·3	2·2
Hardware . .	27·1	42·9	49·2	19·9	21·5	22·1
Coal	3·3	5·6	8·4	2·4	2·8	3·8
Sundries	28·5	40·1	57·3	21·0	20·1	25·7
Total	135·9	199·6	223·1	100·0	100·0	100·0

D.—Customers for British Exports.

	Millions £.			Aliquot Parts.		
	1860.	1870.	1882.	1860.	1870.	1882.
Colonies.	44	52	85	32·1	25·9	35·1
United States. . .	22	28	31	16·1	14·0	12·9
Germany	13	20	19	9·6	10·0	8·0
South America . .	12	17	22	8·8	8·5	9·1
France	5	12	18	3·6	6·0	7·4
Turkey and Egypt .	7	16	10	5·1	8·0	4·0
Holland.	6	11	9	4·4	5·5	3·8
Russia	3	7	6	2·2	3·5	2·5
Belgium.	2	4	8	1·4	2·0	3·3
Italy	4	5	7	2·8	2·5	3·0
Spain and Portugal.	4	5	6	2·8	2·5	2·5
Various	14	23	20	11·1	11·6	8·4
Total	136	200	241	100·0	100·0	100·0

Digitized by Google

E.—Exports of France.

	Quantity (Millions).			Value (Thousands £).		
	1861.	1869.	1880.	1861.	1869.	1880.
Woollen goods .	...	...	...	7,550	10,600	14,800
Silk do. . . .	...	...	...	13,300	17,900	9,400
Cotton do. . .	...	...	...	2,300	2,800	3,200
Wine, gallons .	41	67	55	7,800	10,500	9,800
Spirits „ . .	3½	6	6½	2,000	2,300	3,200
Sugar, lbs. . .	118	273	339	1,700	3,800	4,300
Grain, bushels .	4	13	15	1,400	2,800	2,500
Fruit, lbs. . .	75	62	68	600	1,100	1,000
Cheese, &c. . .	26	64	77	1,400	3,100	3,600
Eggs	260	580	428	700	1,500	1,200
Sundries . . .	...	...	...	58,300	66,600	85,700
Total . . .	...	...	...	97,050	123,000	138,700

F.—Exports of Germany (1880).

	Thousands Omitted.		Thousands Omitted.
Silk goods . . .	£10,300	Leather, &c . .	£6,600
Woollen do. . .	8,600	Sugar . . .	5,500
Cotton do. . . .	2,700	Machinery . .	2,200
Cattle	5,500	Yarns . . .	4,800
Grain	9,700	Sundries . . .	96,400

G.—Exports of Russia.

	Quantity (Millions).			Value (Thousands £).		
	1861.	1870.	1880.	1861.	1870.	1880.
Grain, bushels .	55	120	138	8,500	20,300	22,800
Flax, hemp, lbs.	259	533	540	3,000	8,900	7,800
Linseed, lbs. .	440	810	806	1,500	3,300	3,700
Tallow „ . .	90	48	16	1,500	800	230
Sundries . . .	...	...	...	5,600	9,500	13,070
Total . . .	...	...	...	20,100	42,800	47,600

Digitized by Google

H.—Exports of Austria.

	Quantity (Millions).			Value (Thousands £).		
	1860.	1870.	1880.	1860.	1870.	1880.
Grain, bushels .	16	25	36	2,650	5,150	10,700
Cattle	...	...	...	750	1,030	3,580
Sugar, lbs. . .	...	143	546	...	1,700	5,800
Woollen goods .	6	9	10	1,600	1,700	2,440
Linen goods .	8	12	12	960	1,500	1,100
Timber, cubic ft.	35	57	88	1,650	2,300	4,480
Sundries . . .	...	...	...	11,390	26,120	38,500
Total . . .	...	...	...	19,000	39,500	66,600

I.—Exports of Italy.

	Quantity (Millions).			Value (Thousands £).		
	1862.	1870.	1880.	1862.	1870.	1880.
Silk, lbs. . . .	5	4½	8	8,200	8,400	9,800
Wine, gallons .	5	5	48	430	450	2,600
Fruit, lbs. . .	106	178	216	1,200	1,000	1,400
Oil „ . .	102	128	127	2,600	3,500	3,500
Eggs	42	98	501	70	160	1,400
Sulphur, cwts. .	3	3½	6	1,200	1,050	1,300
Sundries . . .	...	...	...	9,400	15,640	24,100
Total . . .	...	...	...	23,100	30,200	44,100

K.—Exports of Spain.

	Quantity (Millions).			Value (Thousands £).		
	1863.	1870.	1880.	1863.	1870.	1880.
Wine, gallons .	26	33	134	3,480	5,050	9,600
Fruit, lbs. . .	83	140	278	650	1,400	1,700
Oil „ . .	44	13	29	960	250	470
Copper, lbs. . .	4	2	46	150	60	820
Lead, cwts. . .	1	1	2	900	700	1,800
Mercury, lbs. .	1	3	2½	150	400	250
Sundries . . .	...	...	...	5,310	7,840	7,260
Total . . .	...	...	...	11,600	15,700	21,900

Digitized by Google

L.—Exports of Belgium.

	Quantity (Millions).			Value (Thousands £).		
	1860.	1870.	1880.	1860.	1870.	1880.
Coal, tons . .	3½	4	5½	2,200	2,400	3,300
Yarn, lbs. . .	11	24	42	1,200	2,600	5,200
Text. fabrics, lbs.	22	20	43	3,100	2,500	3,100
Flax, lbs. . . .	38	51	62	1,020	2,020	2,700
Sugar „ . . .	1	83	134	20	910	1,300
Iron, cwts. . .	1	4	4½	440	1,500	1,500
Sundries . . .	...	...	...	10,820	15,670	31,600
Total . . .	...	...	...	18,800	27,600	48,700

M.—Exports of Holland.

	Quantity (Millions).			Value (Thousands £).		
	1861.	1870.	1880.	1861.	1870.	1880.
Coffee, lbs. . .	138	176	148	2,200	2,800	2,400
Butter „ . .	39	48	79	1,100	1,400	2,300
Cheese „ . .	62	64	61	800	820	790
Cattle	...	...	...	700	800	1,050
Sugar, lbs. . .	139	206	146	2,100	3,000	2,100
Flax „ . .	33	52	34	900	1,300	900
Rice „ . .	31	40	75	300	450	800
Iron	...	...	...	600	1,000	5,400
Sundries . . .	...	...	...	12,340	20,230	36,360
Total . . .	...	...	...	21,040	31,800	52,100

N.—Exports of United States.

	Annual Average Value in £ (Thousands Omitted).						
	1821–30.	1831–40.	1841–50.	1851–60.	1861–70.	1871–80.	1881.
Cotton. . .	5,300	11,050	11,550	25,600	16,800	37,800	51,600
Grain . . .	1,200	1,060	3,120	6,100	9,400	27,100	55,100
Tobacco . .	1,150	1,560	1,670	3,100	3,900	5,100	4,300
Meat . . .	300	420	1,040	1,800	3,300	12,600	21,800
Butter, cheese	40	40	210	300	1,550	2,800	4,800
Petroleum .	...	...	...	...	2,450	7,800	8,400
Lumber . .	410	590	770	1,600	2,050	3,600	3,800
Manufactures	220	450	1,030	2,200	1,800	4,300	5,800
Sundries . .	2,690	3,030	3,710	7,500	6,200	10,100	28,400
Total . .	11,310	18,200	23,100	48,200	47,450	111,200	184,000

The amounts are calculated in gold throughout. Lard is included with meat.

Digitized by Google

O.—Exports of Australia.

	Quantity (Millions).			Value (Thousands £).		
	1860.	1870.	1880.	1860.	1870.	1880.
Wool, lbs. . .	69	186	374	4,800	9,100	20,100
Gold, oz. . . .	2¾	2	1	11,100	8,000	4,100
Sundries . . .	...	...	...	6,000	11,300	24,700
Total . . .	...	...	...	21,900	28,400	48,900

	Value (Thousands £).			Per Inhabitant, £		
	1860.	1870.	1882.	1860.	1870.	1882.
N. South Wales	5,100	5,800	16,700	15	12	22
Victoria . . .	12,900	12,500	16,200	24	17	18
New Zealand .	600	4,800	6,700	6	19	13
South Australia	1,800	2,400	5,400	14	13	20
Queensland . .	500	2,000	3,300	15	17	15
Tasmania . .	900	700	1,500	10	7	14
West Australia	100	200	500	6	8	17
Total . . .	21,900	28,400	50,300	17	15	18

Gold is included as merchandise in the exports of Australia, but not in other countries.

P.—Exports of Canada.

	Value in £ (Thousands Omitted).		Relative Increase, per Cent.
	1872.	1881.	
Grain	2,400	5,500	125
Meat	650	1,550	145
Fish	800	1,300	62
Butter and cheese .	1,130	2,020	80
Lumber . . .	4,400	4,700	7
Sundries . . .	7,820	5,430	...
Total . . .	17,200	20,500	20

Digitized by Google

Q.—Exports of China.

	Quantity (Millions).		Value (Thousands £).	
	1871.	1880.	1871.	1880.
Tea, lbs. . . .	223	279	12,200	10,800
Silk ,, . . .	7½	10½	7,600	6,800
Sundries . . .	...	...	1,300	5,800
Total . . .	...	...	21,100	23,400

R.—Exports of Egypt (1880).

	Value (Thousands £).		Value (Thousands £)
Cotton . . .	7,770	Grain . . .	2,100
Cotton-seed . .	1,610	Sundries . . .	2,040
Total	£13,520		

S.—Exports of India.

	Quantity (Millions).			Value (Thousands £).		
	1861.	1871.	1881.	1861.	1871.	1881.
Cotton, lbs. . .	370	578	509	7,300	19,500	13,200
Opium ,, . .	8½	12	12½	10,200	10,800	13,600
Rice, cwts. . .	15	16	27	3,000	4,200	9,100
Seeds ,, . .	4	7	10	1,800	3,500	6,400
Jute ,, . .	1	4	6	400	2,600	3,900
Silk, lbs. . . .	2	2	1½	1,050	1,400	600
Tea ,, . . .	1	13	47	90	1,100	3,100
Coffee ,, . . .	19	34	41	300	800	1,600
Wheat, bushels	...	0½	15	...	100	3,300
Sundries . . .	...	...	...	8,860	11,300	19,700
Total . . .	...	...	...	33,000	55,300	74,500

T.—Exports of Brazil.

	Quantity (Millions).			Value (Thousands £).		
	1860.	1870.	1881.	1860.	1870.	1881.
Coffee, lbs. . .	225	343	724	3,500	9,100	16,100
Sugar ,, . .	172	339	345	1,400	2,400	2,200
Cotton ,, . .	22	91	40	600	3,200	1,010
Tobacco ,, . .	10	31	30	250	740	720
Sundries . . .	...	...	...	700	2,600	3,370
Total . . .	...	...	...	6,450	18,040	23,400

Digitized by Google

U.—Exports of Argentine Republic.

	Quantity (Millions).			Value (Thousands £).		
	1860.	1870.	1880.	1860.	1870.	1880.
Wool, lbs. . .	42	160	215	1,400	2,300	5,400
Hides	2	2½	3	1,700	1,900	2,100
Sheep skins, lbs.	10	61	66	200	1,000	1,100
Beef, lbs. . .	42	65	58	400	600	600
Tallow ,, . .	28	46	25	500	700	400
Grain, bushels .	...	...	3	...	...	600
Sundries . . .	...	...	...	300	1,400	1,500
Total . . .	...	...	...	4,500	7,900	11,700

For other countries, see *Commerce*.

V.—Exports of Bullion.

	Millions £.							
	1861–70.			1871–80.			Annual Average.	
	Gold.	Silver.	Total.	Gold.	Silver.	Total.	1861–70.	1871–80.
Great Britain .	112	91	203	172	119	291	20	29
United States .	113	22	135	74	73	147	14	15
France . . .	119	78	197	90	48	138	20	14
Australia . .	108	...	108	76	...	76	11	8
Span.-America	5	74	79	4	68	72	8	7
Various . . .	55	179	234	88	94	182	23	18
Total . . .	512	444	956	504	402	906	96	91

F

FACTORIES (TEXTILE).

A.—Summary for the United Kingdom.

	1850.	1860.	1870.	1880.
Factories	4,601	6,378	6,258	7,105
Spindles, millions . . .	31	36	42	47
Looms, thousands . . .	302	409	606	725
Operatives ,, . . .	596	776	907	976
Steam (horse-power, thousands) .	108	375	473	570

Digitized by Google

B.—Cotton and Woollen Factories.

	Cotton.			Woollen.		
	1850.	1870.	1880.	1850.	1870.	1880.
Factories . . .	1,933	2,483	2,674	1,998	2,579	2,410
Spindles, millions	21	38	40	2½	5	5½
Looms, thousands	250	440	513	42	113	143
Operatives ,,	331	449	487	154	239	265

C.—Factories in 1880.

	Number.	Million Spindles.	Looms (Thousands).	Operatives (Thousands).
Cotton	2,674	39·6	513	487
Woollen	2,410	5·4	143	265
Linen, jute . . .	516	1·5	52	141
Silk, &c.	1,505	·8	17	83
Total	7,105	47·3	725	976
England	6,189	44·4	637	778
Scotland	675	2·0	67	136
Ireland	241	·9	23	62
United Kingdom	7,105	47·3	725	976

D.—Steam-Power.

	Horse-Power (Thousands).			
	1850.	1860.	1870.	1880.
Cotton . . .	71	242	301	356
Woollen . .	23	78	101	122
Linen, jute . .	11	44	52	73
Silk, &c. . .	3	11	19	19
Total . .	108	375	473	570

E.—Power Used in American Factories (1880).

States.	Thousand Horse.			Horse-Power per 1000 Inhabitants.
	Water.	Steam.	Total.	
New England . .	78	137	215	54
Middle.	58	298	356	31
Southern	5	45	50	3
Western	18	229	247	14
Pacific	1	13	14	13
Total	160	722	882	17

Digitized by Google

F.—Factory Steam-Power of Nations (1880).

	Horse-Power (Thousands Omitted).	Horse-Power per 100 Inhabitants.	Ratio of World's Total.
Great Britain	2,200	6·2	29·8
France	906	2·4	12·3
Germany	1,321	3·0	16·6
Belgium	382	7·0	5·6
Russia	237	0·3	3·2
Austria	157	0·4	2·1
Other countries	253	0·4	3·4
Europe	5,456	1·6	73·0
United States	1,987	3·8	27·0
Total	7,443	2·1	100·0

The above includes not only factories, but also mines.

FAILURES.—See *Bankruptcy.*

FAIRS.—In that of Leipzig the annual average of sales is 4 millions sterling, comprising 20,000 tons of merchandise, of which 8000 tons are books.

The fair of Nijni-Novgorod is the greatest in the world, the returns showing:—

Year.	Goods Offered.	Goods Sold.
1841	£8,000,000	£7,000,000
1857	13,000,000	12,000,000
1876	30,000,000	28,000,000

This fair is attended by 150,000 dealers from all parts of the world, and the goods sold in 1876 were:—

Cottons, linens, &c.	£8,000,000
Furs, leather, &c.	7,000,000
Ural metals	7,000,000
Flour, fish, brandy	3,000,000
Tea and luxuries	3,000,000
Total	£28,000,000

FAMILIES.

A.—Large Families.

Parent.	Place.	Number of Children.	Date.
Mme. Frescobaldi	Florence	52	1570
David Wilson	Indiana	47	1850
Mr. Greenhill	Abbots Langley, Herts	39	...
Rev. Dr. Erskine	Scotland	33	1760

Madame Frescobaldi had never less than 3 children at a birth.

Digitized by Google

Fedor Vassileff, of Moscow, 1782, had 83 children living when pensioned by the Czar: he had 69 children by his first wife, at 27 births; and, after her death, had 18 more by his second, in 8 births.

Lucas Saez returned to Spain in June 1883 from the United States with 37 children, 79 grandchildren, and 81 great-grandchildren—in all, 107 males and 90 females; his eldest son being aged 70.

B.—AVERAGE OF CHILDREN TO A MARRIAGE.

England	4·08	Russia	4·83	Spain	4·65
Scotland	4·46	Austria	4·04	Belgium	4·04
Ireland	5·20	Hungary	3·70	Holland	4·22
France	3·03	Switzerland	3·94	Denmark	3·61
Germany	4·10	Italy	4·54	Sweden	4·12

See *Births.*

FAMINES.—Walford mentions 160 since the 11th century, viz.:—

England	57	Scotland	12	Germany	11
Ireland	34	France	10	Italy, &c.	36

The worst in modern times have been:—

Country.	Date.	No. of Victims.
France	1770	48,000
Ireland	1847	1,029,000
India	1866	1,450,000

FASTING.

1684. Four men taken alive out of a mine, in England, after 24 days without food.

1880. Dr. Tanner, New York, lived on water 40 days, losing 36 lbs. weight.

FEVER.—The predisposition to fever varies with age in the following degrees:—

Age.	Degree.	Age.	Degree.
Under 5	10	25–30	102
5–10	94	30–40	44
10–15	182	40–50	16
15–20	269	50–55	6
20–25	197	Over 55	2

Napoleon lost 51,000 soldiers by fever in his campaign of 1812, and the French army 17,000 men in the Crimea, 1855. The visitation of typhus fever in the United Kingdom in 1846–47 attacked 1,400,000 persons, of whom 10,000 died in Liverpool alone. See *Diseases.*

Digitized by Google

FIBRE.

A.—Production in 19th Century.

Year.	Millions of Lbs.					
	Cotton.	Wool.	Flax.	Hemp.	Jute.	Total.
1810	214	442	560	470	...	1,686
1820	302	476	610	490	...	1,878
1830	636	545	730	540	10	2,461
1840	1,192	640	1,080	580	20	3,512
1850	1,260	856	1,320	650	55	4,141
1860	2,391	1,041	1,190	770	102	5,494
1870	2,474	1,453	1,280	884	456	6,547
1880	4,039	1,650	1,140	955	628	8,412

B.—Consumption in United Kingdom.

Year.	Millions of Lbs.					Ratio to World's Crop, per Cent.
	Cotton.	Wool.	Flax.	Hemp and Jute.	Total.	
1810	114	83	60	107	364	23
1820	123	85	87	95	380	20
1830	246	110	138	59	553	21
1840	448	129	210	67	854	24
1850	565	158	249	164	1,136	27
1860	1,140	224	228	164	1,756	33
1870	1,101	309	291	484	2,185	33
1880	1,404	338	227	569	2,538	30

C.—Consumption in all Countries (1880).

	Millions of Lbs.				Ratio.	Lbs. per Inhab.
	Cotton.	Wool.	Flax, &c.	Total.		
U. Kingdom.	1,404	338	796	2,538	33·8	71
France . . .	340	336	286	962	12·8	26
Germany . .	390	190	217	797	10·7	18
Russia . . .	140	170	230	540	7·2	6
Austria . .	150	80	372	602	8·0	16
Belgium, &c. .	330	216	230	776	10·4	15
Europe . .	2,754	1,330	2,131	6,215	82·9	20
United States	910	320	100	1,330	17·1	25
Total . .	3,664	1,650	2,231	7,545	100·0	21

The above is irrespective of yarn (q.v.)

The average production of fibre per 100 acres is—cotton 15, flax 30, hemp 35, and jute 40 tons.

Digitized by Google

FINANCES.

A.—National Government Expenditure.

	Millions Sterling.					
	1830.	1840.	1850.	1860.	1870.	1881.
United Kingdom .	55	52	55	73	70	83
France . . .	41	57	60	83	90	121
Germany . . .	16	22	28	32	51	90
Russia . . .	23	30	42	56	69	80
Austria . . .	18	28	39	45	59	75
Italy . . .	12	19	31	37	41	56
Spain . . .	9	11	14	21	33	33
Portugal . . .	2	3	4	4	5	8
Holland . . .	3	5	7	7	8	10
Belgium . . .	3	5	6	6	7	11
Denmark . . .	2	2	2	2	3	2
Sweden and Norway	2	2	2	3	5	7
Greece . . .	1	1	1	1	2	4
Roumania . .	...	...	...	...	...	5
Turkey . . .	4	6	8	13	21	13
Europe . .	191	243	299	383	464	598
United States . .	3	5	7	12	58	54
Mexico . . .	3	3	4	6	5	4
S. American Republics	2	2	3	4	8	11
Brazil . . .	2	3	5	6	8	11
Canada . . .	1	1	2	3	4	6
Australia . .	1	1	1	8	12	20
Cape Colony . .	1	1	1	1	2	5
Egypt . . .	2	2	3	5	14	8
India . . .	22	25	28	52	55	76
Java . . .	2	4	5	6	8	11
Japan . . .	...	...	...	...	...	11
The World . .	230	290	358	486	638	815

In the above table the expenditure for Germany includes the budgets of Prussia, Bavaria, Saxony, and the minor States, as in Table K. It does not include State expenditure in the United States, nor local taxes in any country.

The expenditure of Europe has exactly doubled since 1850, whereas that of the United Kingdom has risen only 50 per cent. The British expenditure in 1850 was nearly 16 per cent. of the total for all nations: at present it is only 10 per cent. French expenditure has risen about 50 per cent. since 1860, while that of Germany is increased 200 per cent., and the United States 350 per cent.

Digitized by Google

B.—National Expenditure to Population.

	Shillings per Inhabitant.					
	1830.	1840.	1850.	1860.	1870.	1881.
United Kingdom .	46	40	40	50	45	47
France . . .	25	34	35	46	50	68
Germany . . .	12	15	17	18	25	40
Russia . . .	9	10	13	15	19	20
Austria . . .	15	20	26	28	34	40
Italy . . .	15	20	31	38	34	40
Spain . . .	16	18	20	27	40	40
Portugal . . .	11	17	20	20	24	36
Holland . . .	24	34	46	44	46	50
Belgium . . .	18	25	27	25	28	42
Denmark . . .	36	35	33	31	34	24
Sweden and Norway	10	10	10	12	17	22
Greece . . .	20	20	20	16	34	45
Roumania . .	...	...	...	...	...	19
Turkey . . .	7	10	13	18	27	60
Europe . . .	16	20	22	28	31	39
United States . .	4	6	7	8	30	21
Brazil . . .	7	9	12	15	18	23
Canada . . .	10	14	16	18	20	27
Australia . .	40	33	30	125	120	141
Cape Colony . .	...	30	28	49	27	90
India . . .	5	5	5	7	7	8
Java . . .	7	10	10	10	10	12
Egypt . . .	12	12	27	40	56	30
Argentine Republic.	10	10	10	15	34	40
Chili . . .	7	7	15	13	21	35
The World . .	11	13	14	18	22	25

If we take the year 1840 for point of departure, we find the relative expenditure per inhabitant in the principal countries has risen as follows:—

	1840.	1850.	1860.	1870.	1881.
United Kingdom	100	100	125	113	118
France	100	103	135	147	200
Germany . . .	100	113	120	167	267
Russia	100	130	150	190	200
Austria . . .	100	130	140	170	200
Italy	100	155	190	170	200
Spain	100	121	150	242	242
United States .	100	117	133	500	351
Australia . . .	100	90	375	360	424
Canada	100	114	128	142	192

Digitized by Google

C.—Expenditure and Revenue Compared.

	Millions £ per Annum.					
	Expenditure.			Revenue.		
	1830–49.	1850-69.	1870-82.	1830–49.	1850-69.	1870–82.
U. Kingdom .	54	71	77	55	69	80
France . . .	55	92	141	53	78	105
Germany . .	22	42	80	22	37	73
Russia . . .	32	50	82	29	39	60
Austria . . .	29	49	68	28	38	61
Italy	21	48	66	20	31	54
Spain	14	31	39	11	23	30
Portugal . . .	4	6	9	3	4	6
Holland . . .	5	7	9	5	9	9
Belgium . . .	6	7	12	5	6	9
Scandinavia .	4	6	10	4	6	9
Turkey . . .	6	15	18	6	10	16
Europe . .	252	424	611	241	350	512
United States .	6	51	51	5	28	64
Canada . . .	1	4	6	1	3	5
Australia . .	1	7	20	1	5	15
Spanish America	12	20	23	9	16	15
Egypt . . .	3	8	14	3	6	8
India	26	48	59	25	45	55
The World .	301	562	784	285	453	674

Result for 53 *Years, in Millions £.*

	Expenditure.	Revenue.	Surplus Expenditure.	Surplus Revenue.
United Kingdom .	3,501	3,520	...	19
France . . .	4,773	3,985	788	...
Germany . . .	2,320	2,129	191	...
Russia . . .	2,706	2,140	566	...
Austria . . .	2,444	2,113	331	...
Italy	2,238	1,722	516	...
Spain and Portugal .	1,724	1,288	436	...
Holland and Belgium	773	734	39	...
Scandinavia . .	330	317	13	...
Turkey . . .	654	528	126	...
United States . .	1,803	1,492	311	...
Canada . . .	178	145	33	...
India	2,247	2,115	132	...
Australia . . .	420	315	105	...
Egypt . . .	402	284	118	...
Spanish America .	939	695	244	...
The World . .	27,452	23,522	3,930	...

Digitized by Google

D.—Revenues since 1871.

	Millions £.				
	Decade Average, from 1871 to 1880.				Year 1881, Total Revenue.
	Customs.	Property-Tax.	Various.	Total.	
United Kingdom .	20·1	6·6	50·6	77·3	84·0
France	10·3	8·7	85·5	104·5	114·2
Germany	8·6	10·5	53·5	72·6	90·2
Russia	8·5	10·3	41·5	60·3	73·7
Austria	2·6	9·4	48·5	60·5	68·4
Italy	5·0	13·0	35·4	53·4	54·2
Spain	4·4	9·6	15·8	29·8	31·6
Portugal	1·8	0·8	3·2	5·8	7·0
Holland	0·4	1·8	6·5	8·7	8·4
Belgium	0·8	1·5	7·0	9·3	11·4
Denmark . . .	1·0	0·5	1·2	2·7	2·7
Sweden and Norway	2·4	0·5	4·0	6·9	7·0
Europe . . .	65·9	73·2	352·7	491·8	552·8
United States . .	26·0	...	36·2	62·2	75·6
Canada	2·7	...	2·2	4·9	5·4
Australia	4·1	...	10·1	14·2	20·6
Brazil	6·7	0·4	2·2	9·3	11·1
Egypt	0·8	5·0	2·3	8·1	8·4
India	2·2	21·1	31·8	55·1	68·5
The World . .	108·4	99·7	437·5	645·6	742·4

E.—Revenues of the Three Kingdoms (1881).

	Thousands £.			Shillings per Inhabitant.		
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.
Customs . .	15,319	1,945	1,920	12	11	7
Excise . . .	16,626	4,524	4,068	13	25	16
Stamps . .	9,373	1,224	710	7	7	3
Taxes . . .	10,360	1,013	471	8	6	2
Post Office .	6,630	840	830	5	5	3
Sundries . .	6,538	830	820	5	5	3
Total . .	64,846	10,376	8,819	50	59	34

Digitized by Google

F.—Increase of German Revenues.

	Millions £.		Shillings per Inhab.	
	1867.	1882.	1867.	1882.
Prussia	25·3	39 0	21	29
Bavaria	5·9	11·1	25	42
Saxony	2·2	3·2	18	21
Wurtemburg	1·3	2·5	15	25
Baden	1·7	2·1	24	28
Alsass	...	2·4	...	30
Hamburg	0·7	1·4	47	61
Duchies, &c.	3·4	4·8	25	24
Total	40·5	66·5	19	29
Imperial	...	24·8	...	11
Total	40·5	91·3	19	40

G.—Expenditure in 1881–82.

	Millions £.			
	Government.	Interest on Debt.	Army and Navy.	Total.
United Kingdom	25·6	29·6	27·9	83·1
France	42·1	49·4	29·6	121·1
Germany	57·2	10·7	22·5	90·4
Russia	26·3	24·2	29·5	80·0
Austria	38·8	23·7	12·6	75·1
Italy	22·1	24·5	10·4	57·0
Spain	14·2	12·4	6·3	32·9
Portugal	3·7	2·9	1·2	7·8
Holland	5·1	2·3	2·6	10·0
Belgium	6·2	3·6	1·8	11·6
Denmark	1·0	0·5	0·9	2·4
Sweden and Norway	4·2	1·0	1·8	7·0
Europe	246·5	184·8	147·1	578·4
United States	26·3	18·4	9·4	54·1
Canada	3·4	1·8	0·2	5·4
Australia	13·9	4·7	0·2	18·8
Brazil	4·5	3·7	2·9	11·1
Egypt	4·4	3·5	0·5	8·4
India	49·2	5·7	21·7	76·6
Japan	4·6	4·3	2·2	11·1
Argentine Republic	2·2	2·0	1·4	5·6
The World	355·0	228·9	185·6	769·5

Interest on debt includes Sinking Fund.

Digitized by Google

H.—Ratios of Expenditure (1881–82).

	Shillings per Inhabitant.				Aliquot Parts of Budget.		
	Government.	Debt.	Army.	Total.	Government.	Debt.	Army and Navy.
United Kingdom	14	17	16	47	30·7	35·7	33·6
France . . .	23	28	17	68	34·8	40·8	24·4
Germany . . .	25	5	10	40	63·4	11·8	24·8
Russia	7	6	8	21	32·8	30·2	37·0
Austria . . .	20	13	7	40	51·6	31·7	16·7
Italy	16	17	7	40	38·8	43·4	17·8
Spain	17	15	8	40	43·8	37·2	19·0
Portugal . . .	17	14	6	37	48·8	36·2	15·0
Holland . . .	25	12	13	50	51·0	23·0	26·0
Belgium . . .	22	13	7	42	53·1	31·3	15·6
Denmark . . .	11	5	9	25	44·0	20·0	36·0
Sweden and Nor.	13	3	6	22	60·0	14·3	25·7
Europe . . .	16	13	10	39	43·1	31·6	25·3
United States .	11	7	4	22	49·1	33·7	17·2
Canada . . .	17	9	1	27	63·1	33·2	3·7
Australia . . .	105	35	1	141	73·9	25·1	1·0
Brazil	9	8	6	23	40·0	33·6	26·4
Egypt	16	12	2	30	52·8	41·2	6·0
India	5	1	2	8	64·0	7·5	28·5
Japan	3	3	1	7	40·9	39·1	20·0
Argentine Repub.	17	15	12	44	39·8	34·2	26·0
The World . .	11	8	6	25	46·3	29·6	24·1

The countries in which debt absorbs too much of revenue are the following:—

	Italy.	Egypt.	France.	Japan.	Spain.	Portugal.
Debt	43·4	41·2	40·8	39·1	37·2	36·2
Government .	38·8	52·8	34·8	40·9	43·8	48·8
Army and navy	17·8	6·0	24·4	20·0	19·0	15·0
Total . .	100·0	100·0	100·0	100·0	100·0	100·0

The countries wherein military expenditure (army and navy) constitutes a high ratio are the following:—

	Russia.	Denmark.	U. Kingdom.	India.	Brazil.	Holland.
Army and navy	37·0	36·0	33·6	28·5	26·4	26·0
Government .	32·8	44·0	30·7	64·0	40·0	51·0
Debt	30·2	20 0	35·7	7·5	33·6	23·0
Total . .	100·0	100·0	100·0	100·0	100·0	100·0

Digitized by Google

I.—British Revenues in 40 Years.

	Millions £.				
	1842–51.	1852-61.	1862–71.	1872–81.	40 years.
Customs . . .	226	237	221	199	883
Excise. . . .	151	181	204	268	804
Stamps . . .	71	78	94	110	353
Income-tax . .	55	102	78	71	306
Post Office . .	18	30	45	74	167
Sundries . . .	46	50	69	77	242
Total . . .	567	678	711	799	2,755

	Shillings per Inhabitant per Annum.				
	1842–51.	1852-61.	1862–71.	1872–81.	40 years.
Customs . . .	16·7	16·9	14·7	12·2	14·7
Excise. . . .	11·2	12·8	13·5	16·2	13·4
Stamps . . .	5·2	5·5	6·2	6·7	5·9
Income-tax . .	4·1	7·3	5·2	4·3	5·1
Post Office . .	1·3	2·2	3·0	4·5	2·7
Sundries . . .	3·5	3·5	4·5	4·7	4·0
Total . . .	42·0	48·2	47·1	48·6	45·8

	Aliquot Parts.				
	1842–51.	1852-61.	1862–71.	1872–81.	40 years.
Customs . . .	39·8	34·8	31·1	25·0	32·1
Excise. . . .	26·5	26·7	28·7	33·5	29·2
Stamps . . .	12·6	11·5	13·2	13·7	12·8
Income-tax . .	9·8	15·1	10·9	8·9	11·1
Post Office . .	3·2	4·4	6·3	9·2	6·1
Sundries . . .	8·1	7·5	9·8	9·7	8·7
Total . . .	100·0	100·0	100·0	100·0.	100·0

The financial legislation of the last 30 years has had for object to lighten the Customs dues, which press unduly on the working classes: the percentage of pauperism in England declines steadily as the Customs dues are reduced. The increase of Post Office revenue is another favourable sign, this item now representing more than 10 per cent. of the total revenue.

Digitized by Google

K.—British Expenditure in 40 Years.

	Millions £.			
	Government.	Debt.	Army and Navy.	Total.
1842–51 . . .	102	287	160	549
1852–61 . . .	136	285	288	709
1862–71 . . .	164	265	263	692
1872–81 . . .	233	281	280	794
40 years. . .	635	1,118	991	2,744

	Shillings per Inhabitant per Annum.			
	Government.	Debt.	Army and Navy.	Total.
1842–51 . . .	7·5	21·3	11·9	40·7
1852–61 . . .	9·7	20·3	20·5	50·5
1862–71 . . .	10·9	17·7	17·5	46·1
1872–81 . . .	14·2	17·0	16·9	48·1
40 years. . .	10·5	18·5	16·7	45·7

	Aliquot Parts.				
	1842–51.	1852–61.	1862–71.	1872–81.	40 years.
Government .	18·6	19·2	23·5	29·3	23·1
Debt	52·3	40·2	38·4	35·4	40·7
Army and navy	29·1	40·6	38·1	35·3	36·2
Total . . .	100·0	100·0	100·0	100·0	100·0

Comparing the expenditure with population, we find the cost of administration or government has risen from 7s. 6d. per head in the first decade to 14s. 3d. in the fourth, that of the army and navy from 12 to 17 shillings, while the burden of debt has declined from 21s. 4d. to 17 shillings.

Comparing expenditure with national earnings, we find:—

	Annual Average, Millions £.		
	Nat. Earnings.	Expenditure.	Ratio.
1842–51	610	55	9·0
1852–61	715	71	10·0
1862–71	890	69	7·8
1872–81	1,110	79	7·2
40 years average . .	830	69	8·3

Digitized by Google

L.—Finances of Cities (1880–81).

	Thousands £.		£ per Inhabitant.	
	Annual Expenditure.	Debt.	Expenditure.	Debt.
Antwerp	376	...	2·1	...
Berlin	2,200	5,610	2·0	5·1
Birmingham	1,610	6,110	4·0	15·0
Boston	...	6,200	...	16·5
Bradford	1,100	3,400	6·0	19·0
Breslau	361	1,270	1·5	5·3
Brighton	210	700	1·6	5·5
Bristol	405	600	2·0	2·9
Brooklyn	...	7,900	...	14·9
Bucharest	337	570	1·5	1·8
Buda-Pesth	672	1,280	2·2	4·3
Christiania	250	345	3·3	4·5
Copenhagen	325	850	1·6	4·1
Florence	950	5,540	5·7	33·5
Frankfort	422	1,460	3·5	12·1
Genoa	466	1,600	2·6	9·0
Leeds	1,300	3,500	4·2	11·3
Leipsig	312	740	2·3	5·5
Liège	309	1,500	2·7	13·5
Liverpool	3,200	21,600	5·9	39·6
London	11,300	20,600	2·9	5·3
Manchester	1,900	6,200	3·3	10·9
Milan	...	3,050	...	9·3
Munich	395	1,500	1·8	7·0
Naples	...	4,860	...	9·9
Newcastle	400	700	2·7	4·8
New York	...	23,100	...	19·1
Palermo	320	540	1·3	2·2
Paris	10,440	85,300	4·7	34·2
Philadelphia	...	3,400	...	4·1
Rome	820	2,340	2·7	7·8
San Francisco	970	750	4·1	3·2
St. Louis	...	4,800	...	14·0
Sheffield	410	500	1·4	1·8
Stockholm	360	480	2·3	3·0
Stuttgart	120	400	1·1	3·7
Trieste	373	500	3·7	4·9
Turin	520	510	2·7	2·7
Venice	182	430	1·4	3·3
Vienna	2,700	8,470	2·5	7·8

The debts of cities in the United States in 1881 reached an aggregate of 115 millions sterling for 9,160,000 inhabitants, or £12, 10s. per head. See *Debts.*

Digitized by Google

FIRE.

A.—Value of Property Destroyed Yearly.

	Thousands £.	Shillings per Inhabitant.	Ratio of Insured Property, per Cent.
United Kingdom	9,100	5·1	46
France	3,100	1·7	75
Germany	6,200	2·7	74
Russia	14,000	3·4	9
Austria	3,500	2·0	...
Italy	1,000	0·7	...
Spain	500	0·6	...
Belgium	520	1·9	43
Holland	400	2·0	...
Scandinavia	1,300	3·2	...
Europe	39,620	3·1	...
United States	16,800	7·0	55
Canada	2,100	9·2	44
The World	58,520	4·2	...

B.—Fires in Cities, Annual Average.

	Number of Fires.	Number per 100,000 Inhabitants.	Loss (Thousands £).	Per Inhabitant, Pence.
London	1,991	49	1,100	66
Paris	....	...	270	34
New York	1,783	144	780	150
Manchester	328	59	120	55
San Francisco	....	...	112	122
Philadelphia	655	76	460	130
Chicago	490	98	360	180
Boston	389	117	130	95
Baltimore	172	52	70	55
Cincinnati	213	85	144	144
St. Louis	197	49	160	98

C.—Increase of London Fires.

Years.	Annual Average. Number of Fires.	Houses to a Fire.	Inhabitants to a Fire.
1840–49	768	362	2,731
1850–59	977	331	2,570
1860–69	1,430	288	2,390
1870–80	1,795	264	2,150

Fires on Saturday are 5 per cent. more numerous than on any other day in London; but in Paris Friday has 20 per cent. over the average.

Digitized by Google

D.—Fires in France.

Years.	Annual Average. Number of Fires.	Houses to a Fire.	Inhabitants to a Fire.
1845–50	8,260	873	4,120
1851–60	10,556	715	3,485
1861–70	13,865	562	2,720

E.—Deaths by Fire.

Per Million Inhabitants per Annum.

Munich	4	Naples	41
Glasgow	17	Hanover	57
Berlin	20	Cologne	71
Paris	24	London	83

The loss of life in England and Wales from fire averages 1490 persons yearly, of whom 42 per cent. are males and 58 per cent. females. The London firemen save 110 lives yearly.

F.—Historical Fires.

Year.	Place.	Loss.
1570	Moscow	200,000 victims.
1666	London	13,200 houses.
1812	Moscow	15,500 „
1824	Cairo	4,000 victims.
1831	Constantinople	18,000 houses.
1835	New York	£6,000,000.
1842	Hamburg	£7,200,000.
1851	San Francisco	2,500 blocks.
1871	Chicago	£33,000,000.
1872	Boston	£15,000,000.

G.—Fire-Brigades.

	Fire-Engines.	Firemen.	Cost of Brigade.	Firemen per 100,000 Inhabitants.	Cost of Brigade, Pence per Inhab.
London	38	536	£80,000	13	5
Paris	203	1,500	98,000	68	11
St. Petersburg	37	1,150	...	127	...
Hamburg	53	790	...	305	...
New York	38	690	250,000	55	48
Philadelphia	27	404	103,000	49	29
Chicago	27	200	94,000	40	48
Boston	26	472	110,000	138	79
Cincinnati	18	155	62,000	62	64
St. Louis	17	100	40,000	26	24
Baltimore	18	140	40,000	43	30
San Francisco	14	200	...	82	...
Berlin	50	1,090	...	96	...
Lyons	48	475	...	98	...

Digitized by Google

The London fire-brigade uses 17 million gallons water yearly, that is, 4½ gallons per inhabitant, or 8500 gallons for each fire. The New York brigade consumes 32 million gallons, that is, 25 gallons per inhabitant, or 18,000 gallons per fire.

H.—Cost of Brigade to Number of Fires.

London . . .	£40	Philadelphia .	£153	Baltimore . .	£230
Sydney . . .	88	Chicago . .	188	Boston . . .	280
New York . .	138	St. Louis . .	201	Cincinnati . .	295

FIRE-DAMP.

	Period.	Explosions.	Deaths.	Per Annum.
Great Britain .	1871–80	424	2,685	268
Belgium . .	1848–78	194	967	32

In Great Britain during 10 years ending 1880, the deaths from fire-damp explosions were nearly one-fourth of the total in mining accidents, viz. :—

	Number.	Per Annum.
Fire-damp	2,685	268
Roof falling in . . .	4,508	451
Various	4,156	416
Accidental deaths . .	11,349	1,135

See *Mining*.

FIREWOOD.—The average yield, per acre of forest, is as follows :—

Age of Trees, Years.	Firewood, Cubic Feet.	Age of Trees, Years.	Firewood, Cubic Feet.	Age of Trees, Years.	Firewood, Cubic Feet.
10 . . .	700	50 . . .	6,200	120 . . .	11,400
15 . . .	1,100	60 . . .	7,500	140 . . .	12,400
20 . . .	1,800	70 . . .	8,300	150 . . .	12,800
25 . . .	2,600	80 . . .	9,200	200 . . .	13,400
30 . . .	3,300	90 . . .	9,700	250 . . .	12,000
40 . . .	4,900	100 . . .	10,200	300 . . .	11,000

Firewood is usually measured and sold by the "cord," which contains 125 cubic feet, or 2½ tons. Europe consumes 126 million tons of firewood yearly, and the United States 28½ million tons: the ordinary value is 5 shillings per ton. The lowest consumption is in England and Belgium, about 2 cubic feet per annum per inhabitant; the highest in Norway, Russia, and Canada, almost 40 feet per inhabitant. See *Timber*, *Forest*.

Digitized by Google

FISHERIES.

A.—Fishery of the World

	Vessels.	Men (Thousands).	Thousand Tons Fish.	Value (Thousands).	Per Fisherman.	Cwts of Fish per Man.
United Kingdom	34,900	113	380	£3,550	£32	68
France	21,900	85	130	3,480	40	31
Germany . . .	8,100	17	40	400	24	48
Russia	13,500	68	220	2,200	33	62
Austria . . .	2,800	7	15	150	22	41
Italy	18,200	61	100	1,000	16	34
Spain	10,200	38	50	500	13	27
Norway . . .	16,600	113	115	1,660	15	21
Holland . . .	2,000	8	20	200	25	50
Europe . . .	128,200	510	1,070	£13,140	£26	42
United States .	6,600	52	140	950	19	55
Canada . . .	11,200	53	260	2,450	48	98
The World .	146,000	615	1,470	£16,540	£27	48

B.—British Fisheries.

	Vessels.	Men.	Barrels Herrings.
English . .	14,420	44,200	845,000
Scotch . . .	14,650	47,100	1,580,000
Irish . . .	5,830	21,300	210,000
Total . .	34,900	112,600	2,635,000

The above vessels take other fish besides herrings, but the latter form 70 per cent. of the total value of our sea-fishing. Including fresh-water fish, the annual value is nearly £5,000,000, viz.:—

Kind.	Tons.	Value.
Salmon	3,600	£380,000
Cod	13,000	140,000
Whale	...	700,000
Herrings	300,000	2,400,000
Pilchards	3,000	30,000
Lobsters, &c.	...	900,000
Total	...	£4,600,000

The take of salmon is 60 per cent. Scotch, 30 per cent. Irish, and 10 per cent. English. A barrel of herrings contains 1000, of pilchards, 3000 fish: about half of the herrings and two-thirds of the pilchards are exported. Salmon caught in the Tay sometimes weigh as much as 70 lbs.

Digitized by Google

C.—French Fisheries.

The product in 1880 was as follows:—

Kind.	Tons.	Value.
Cod	34,000	£310,000
Herring and mackerel	48,000	680,000
Sardines	38,000	1,650,000
Various	10,000	840,000
Total	130,000	£3,480,000

The difference between deep-sea and coast fishing was as follows:—

	Deep-sea.	Coast.	Total.
Men	13,000	72,000	85,000
Tons fish	34,000	96,000	130,000
Value	£350,000	£3,130,000	£3,480,000

Being an average of £26 per deep-sea, and £44 per coast fisherman.

D.—Norway Fisheries.

	Cod.	Herring.	Total.
Fishermen	58,000	53,000	111,000
Fish, millions	65	410	475
Value	£920,000	£640,000	£1,560,000

Besides the above the Norwegians take 350 whales, 80,000 seals, and in fresh waters a quantity of salmon.

E.—Canadian Fisheries.

Fish.	Value.
Cod, tons	45,000	£520,000
Herring, tons	48,000	580,000
Seals, Number	460,000	280,000
Whale, &c.	...	1,070,000
Total		£2,450,000

FLAX.

A.—Production.

	Thousand Tons.	Thousand Acres.	Lbs. per Acre.
United Kingdom	25	154	360
France	37	165	510
Germany	48	292	370
Russia	270	1,950	280
Austria	53	262	460
Italy	23	203	255
Belgium and Holland	38	187	450
Scandinavia	4	41	218
United States	12	160	175
Total	510	3,414	335

Digitized by Google

B.—Consumption in United Kingdom.

Year.	Million Lbs.			Value per Ton.
	British.	Imported.	Total.	
1820 . .	30	57	87	£80
1830 . .	35	103	138	80
1840 . .	40	170	210	·70
1850 . .	46	202	248	36
1860 . .	65	163	228	50
1870 . .	72	219	291	52
1880 . .	58	169	227	45

New Zealand phormium gives 17 per cent. of flax.

C.—Consumption in All Countries.

	Tons per Annum.		Tons per Annum.
United Kingdom .	104,000	Austria . . .	60,000
France . . .	66,000	Italy and Switzerland .	11,000
Germany . . .	35,000	Belgium and Holland .	30,000
Russia	41,000	United States . .	20,000

FLOODS.

Date.	Place.	Loss.
1642 . .	China	300,000 lives.
1646 . .	Holland . . .	110,000 ,,
1875 . .	Toulouse . . .	£15,000,000.
1876 . .	Bengal	200,000 lives.
1879 . .	Zegedin	£8,500,000.
1883 . .	Rhine Valley . . .	£6,000,000.

In the last-mentioned the area of country under water was 260 square miles, equal to the extent of the Lake of Constance.

FLOUR.—The nutritive value is as follows:—

Ordinary English . .	100	Essex (England) . .	121
German	115	Scotch	134
Canada	117	United States . .	145

There are 12,000 flour-mills in the United Kingdom, valued at 25 millions sterling.

A sack of flour containing 280 lbs. will make 368 lbs. bread in England, and 420 lbs. in the United States, 7 lbs. of American flour being equal to 8 lbs. of the best English. One ounce of flour contains 148 foot-tons of energy, sufficient to lift a male adult 500 feet. See *Diet.*.

Digitized by Google

FOOD.

A.—Yearly Consumption of Necessaries.

	Per Inhabitant, Lbs.				Value.
	Grain.	Meat.	Butter.	Sugar.	
United Kingdom . .	330	105	13	68	£7 2 0
France	505	74	4	21	5 11 0
Germany	585	69	8	21	5 17 0
Russia	490	48	3	7	3 4 0
Austria	410	64	5	14	4 16 0
Italy	420	23	1	7	3 3 0
Spain	390	49	0	5	3 8 0
Belgium and Holland	445	69	6	16	4 11 0
Denmark	475	70	15	31	5 18 0
Sweden and Norway	340	65	9	17	3 17 0
United States . . .	392	120	16	23	6 6 0
Average	445	70	7	20	5 6 0

B.—Consumption of Luxuries, per Inhabitant.

	Ounces.			Gallons.		
	Coffee.	Tea.	Tobacco.	Wine.	Beer.	Spirits.
United Kingdom .	15	72	23	0·44	28·60	1·05
France	52	1	29	20·12	5·10	0·90
Germany	83	1	72	2·70	19·40	1·33
Russia	3	7	26	0·38	0·80	2·20
Austria	35	1	80	7·50	6·50	0·80
Italy	18	1	22	17·60	0·70	0·30
Spain	4	1	32	13·50	0·10	0·20
Belgium and Holland	175	8	84	0·80	22·20	2·60
Denmark	76	8	61	0·30	12·60	4·30
Sweden and Norway	88	2	29	0·20	5·40	4·20
United States . .	115	21	59	0·60	7·20	1·50
Average	44	11	41	5·50	8·60	1·10

There are many valuable items of food besides those in the foregoing tables. Grain is largely supplemented by potatoes in Ireland and Germany, and by chestnuts in Italy: moreover, this column does not include rice, the consumption of which is rapidly increasing. Meat includes fowl, but neither game nor fish, nor lard, all of which enter largely into European food. Cheese (q.v.) is another important item not included above. The same may be said of fruit and vegetables.

Digitized by Google

C.—Cost of Food.

	Millions £.					Average per Inhabitant.
	Grain.	Meat.	Liquor.	Sundries.	Total.	
United Kingdom .	55	140	102	176	473	£13 9 0
France	92	105	74	121	392	11 8 0
Germany . . .	120	126	80	180	506	11 5 0
Russia	132	107	84	193	516	6 9 0
Austria	56	88	63	113	320	8 8 0
Italy	62	25	37	80	204	7 6 0
Spain	32	21	20	50	123	7 11 0
Belgium & Holland	21	17	19	45	102	10 14 0
Denmark . . .	5	5	5	8	23	11 8 0
Sweden & Norway	11	10	8	23	52	8 6 0
United States . .	92	153	74	255	574	11 2 0
Total	678	797	566	1,244	3,285	£9 8 0

D.—Comparative Cost of Food.

	Millions £.		Ratio of Food to Earnings, per Cent.	Days of Work Equal to Food.
	National Earnings.	Food Value.		
United Kingdom .	1,247	473	37·8	114
France . . .	965	392	40·6	121
Germany . . .	850	506	59·5	177
Russia . . .	760	516	67·9	204
Austria . . .	602	320	53·1	159
Italy	292	204	69·8	210
Spain	188	123	65·3	196
Belgium and Holland	224	102	45·5	143
Denmark . . .	45	23	50·6	152
Sweden and Norway.	104	52	50·0	150
United States . .	1,420	574	40·4	121

The days of work are 300 per annum, allowing rest on 52 Sundays, and 13 days of sickness for each inhabitant, the latter being Dr. Farr's average.

Those countries are relatively the most affluent where the cost of food is lowest as compared with total earnings, viz., Great Britain, the United States, and France, and in these wealth will most rapidly accumulate. But if we consider only the working classes (see *Wages*), we find that in the United States the cost of food is exactly one-third the value of labour, whereas in Great Britain it is almost one-half, and in France still more.

Digitized by Google

E.—Food Imports into United Kingdom.

	Thousands of Tons.			Per Inhabitant, Lbs.		
	1860.	1870.	1880.	1860.	1870.	1880.
Wheat . . .	1,588	1,853	3,310	123	137	212
Meat	91	144	650	7	10	41
Butter . . .	43	58	116	3	4	7
Cheese . . .	30	52	88	2	4	5
Sugar	441	765	999	33	55	64
Tea	35	54	72	2	4	5
Coffee	16	14	14	1	1	1
Rice	19	95	220	1	7	14
Eggs	8	22	37	½	1	2
Total . . .	2,271	3,057	5,506	172	223	351

Each inhabitant consumed in 1870 twice his own weight of imported food, and in 1880 three times his weight. Meat includes lard.

F.—Value of Food Imports, United Kingdom.

	Millions £.			Shillings per Inhabitant.		
	1860.	1870.	1880.	1860.	1870.	1880.
Wheat . . .	20·9	19·7	39·3	15	13	23
Meat	4·4	7·7	26·6	3	5	15
Butter . . .	4·1	6·8	12·1	3	5	7
Cheese . . .	1·6	3·3	5·1	1	2	3
Sugar	12·4	17·6	22·2	8	11	13
Tea	5·9	9·0	8·8	4	6	5
Coffee	1·2	0·8	1·3	1	1	1
Rice	0·4	0·9	2·1	...	...	1
Eggs	0·5	1·1	2·2	...	1	2
Total . . .	51·4	66·9	119·7	35	44	70

The United Kingdom imports of food, compared with consumption, are as follows:—37 per cent. of the meat (including lard), 58 per cent. of the cheese and butter, and 61 per cent. of the wheat, necessary for its annual supply

G.—Food of French Cities.

Per Inhabitant, per Annum.

	Lbs.		Gallons.
Bread	449	Wine	35
Meat	127	Beer	5
Butter	8	Cider	6

Digitized by Google

The consumption in Paris, 1880, was as follows :—

	Per Inhab. Lbs.		Per Inhab. Lbs.
Meat	187	Butter and cheese	18
Fish	29	Vegetables and fruit	16
Fowl	24	Coal	960

Also 127 eggs, 48 gallons wine, and 1½ gallon spirits.

The consumption of bread per inhabitant in Paris has declined as follows :—

Year.	Lbs.	Year.	Lbs.
1833–35	392	1860–69	361
1856–59	345	1879	331

The consumption of bread per inhabitant is falling in most French cities, viz. :—

	Lbs. per Annum. 1865–69.	1879.		Lbs. per Annum. 1865–69.	1879.
Lille	528	493	Bordeaux	418	363
Marseilles	477	559	Lyons	440	383

The consumption of meat averages per annum 181 lbs. per inhabitant in Lyons, 156 in Bordeaux, and 112 in Lille. The ratio is rising in these towns.

H.—Food Exports of United States.

Year.	Millions. Grain, Bushels.	Meat, Lbs.	Butter and Cheese, Lbs.	Per Inhabitant. Grain, Bushels.	Meat, Lbs.	Butter and Cheese, Lbs.
1821	5	22	1	0·5	2·2	0·1
1831	11	24	2	0·9	2·0	0·2
1841	9	47	5	0·5	2·6	0·3
1851	14	78	11	0·6	3·3	0·5
1861	66	142	48	2·0	4·4	1·5
1871	62	235	73	1·6	6·0	1·9
1881	285	1,536	180	5·6	30·1	3·6

Meat includes lard and live cattle.

I.—Food Exports of Russia.

	Millions. Grain, Bushels.	Meat, Lbs.	Value of both.
1861	56	8	£9,200,000
1865	57	13	8,600,000
1870	121	36	20,800,000
1875	128	48	21,100,000
1880	137	68	24,200 000

Digitized by Google

FOREIGN RESIDENTS.

A.—Foreigners in Various Countries (1880).

	Thousands.	Percentage of Pop.		Thousands.	Percentage of Pop.
United Kingdom *	161	0·52	Swed. and Nor.	17	0·27
France . . .	864	2·30	Greece . . .	20	1·20
Germany . . .	291	0·64	Roumania . .	89	1·82
Russia	148	0·21	Europe . . .	2,366	0·80
Austria . . .	127	0·35	United States .	6,680	13·40
Switzerland . .	211	7·77	Brazil . . .	243	2·64
Italy	273	1·02	Argent. Repub.	212	11·20
Spain	41	0·26	Egypt . . .	83	1·52
Holland . . .	64	1·65	Chili	27	1·31
Belgium . . .	98	1·96	China	4	...
Denmark . . .	54	2·84	Japan . . .	2	0·01

B.—Foreign Residents at Various Periods.

	Thousands.			Ratio to Population.		
	United Kingdom.	France.	United States.	United Kingdom.	France.	United States.
1880 . .	...	864	6,680	...	2·30	13·40
1870 . .	161	731	5,569	0·52	2·03	14·48
1860 . .	102	475	4,136	0·35	1·33	13·10
1850 . .	62	371	2,241	0·23	1·06	9·62
1840 . .	36	...	859	0·13	...	5·10
1820 . .	...	...	177	...	...	1·85
1800 . .	...	...	44	...	...	0·62

C.—Foreigners in Cities.

	Per 1000 Inhab.		Per 1000 Inhab.		Per 1000 Inhab.
Paris . . .	75	Berlin . . .	13	Buenos Ayres	88
London . .	21	Pesth-Buda .	14	Montevideo .	96

D.—Foreigners in Paris (1881).

	Thousands.		Thousands.		Thousands.
Belgians . .	45	English . .	11	Austrians .	5
Germans . .	31	Dutch . .	9	Spaniards .	4
Italians . .	22	Americans .	6	Various . .	5
Swiss . . .	21	Russians . .	6		
	Total				164

FOREIGN SERVICE.—Between the years 1691 and 1745 there were 453,000 Irishmen who died in the French service.

* In 1871.

Digitized by Google

FORESTS.

A.—Forests of the World.

	Forest Area, Millions of Acres.	Ratio to Total Area.	Acres Forest, per 100 Inhab.	Product, per Acre.	
				Cubic Feet.	Shillings.
		Per Cent.			
United Kingdom .	2	3	6	60	15
France	23	17	60	50	8
Germany	33	25	75	44	7
Russia	485	33	665	20	2
Austria	46	27	127	52	4
Italy	11	15	40	45	4
Spain and Portugal	8	6	38	...	5
Belgium and Holl.	1½	10	16	48	8
Scandinavia . . .	63	32	740	20	5
Europe . . .	673	27	220	35	3
United States . .	176	8	343	18	9
Canada	174	9	4,410	2	...
Brazil	135	6	1,390	1	...
Gran Chaco . . .	37	35	...	...	...
Algeria	6	3	180	...	...
Total	1,201	12	333	...	...

Since 1848 the French have converted 9 million acres of waste land into forest, producing 7 shillings an acre. Paris burns the timber of 50,000 acres yearly, requiring an area of 1 million acres of forest to keep up the supply. Wood-cutters in the United States fell 10,000 acres daily, or 3 million acres per annum. There are (1882) 15,100 saw-mills in United States, and 640 in Canada. State and Communal forests in France cover 8 million acres, and are valued at £15 per acre.

B.—Forests in Germany.

	Forest Area, Acres.	Acres per 100 Inhab.	Crown Forests, Product per, Annum.
Prussia . .	16,360,000	59	£1,070,000
Bavaria . .	6,270,000	121	640,000
Wurtemburg .	1,550,000	80	220,000
Other States .	8,630,000	78	1,740,000
Total . .	32,810,000	75	£3,670,000

Digitized by Google

C.—Crown Forests.

	Area, Acres.	Product.	Per Acre, Shillings.
France . . .	2,560,000	£1,520,000	12
Germany . .	9,430,000	3,670,000	8
Austria . . .	7,520,000	1,480,000	4
Russia . . .	333,400,000	13,200,000	1
Sweden and Norway	10,300,000	1,500,000	3
Italy . . .	540,000	220,000	8
Total . . .	363,750,000	£21,590,000	...

Russian crown forests comprise 30 million acres belonging to the Czar and 303 millions to the National Exchequer: the annual product averages only 10 pence per acre, against 30 pence in forests not belonging to the State. The Czar employs 27,000 wood-police, who cut 12 million tons, chiefly firewood, per annum, that is, 1½ tons daily, valued at 2 shillings per ton (50 cubic feet). In Hungary, besides crown forests, there are 1½ million acres held by the clergy: the yield of Austrian and Hungarian forests is nearly 60 per cent. firewood, 40 per cent. for carpenters. See *Timber, Firewood.*

FORGERY.—In one year (1820) no fewer than 46 persons were hanged for forging Bank of England notes, but some of the notes were afterwards asserted to be good. Juries refused to hang any more.

FORTIFICATIONS.—Louis Philippe spent 16 millions sterling on forts, especially the *enceinte* of Paris. Lord Palmerston spent 7½ millions on the coast fortifications begun by him in 1860. The German Government has spent 2½ millions sterling in military works around Strasburg. The site occupied by the Paris fortifications is 3900 acres, and was valued in 1840 at £140 an acre: it is now about to be sold for £700 an acre, on the levelling of the forts.

FOSSILS.—See *Geology.*

FOUNDLINGS.—The Paris hospital receives 105,000 yearly, of whom 60 per cent. die before 12 months. There is a similar hospital at Moscow, which receives 12,000 yearly: the boys are brought up for the navy.

FOUNTAINS.—The Drinking Fountain Society of London (established 1859), of which the Duke of Westminster is

Digitized by Google

president, maintains 511 fountains and 526 troughs, from which 15 million persons and 6 million horses and other animals drink every month. Sir Richard Wallace erected 50 drinking fountains for the poor of Paris.

FREIGHT.

A.—By Land and Water.

Per 100 Miles, 1 Ton.

By sea	6 pence	By railway	10 shillings
„ canal	2 shillings	„ high-road	30 „

The average varies according to country, but the above is a general average for European nations. The merchandise of the world pays £8 ocean freight for every £100 worth carried.

B.—Freights by Railway per 100 Miles, per Ton.

	Pence.		Pence.
Belgium	70	New England	120
Germany	84	Great Eastern (England)	120
Chicago	106	Great Western „	130
Italy	108	North-Western „	130
Austria	111	Great Northern „	150
Holland	118	France	154
Ireland	119	Sweden	160

The above rates are for grain, except Germany, which is the general average (1882).

FRIENDLY SOCIETIES.

A.—General Statement.

	No.	Members, Thousands.	Assets, Millions £.	Capital per Member, £.	Members per 100 Inhab.
Great Britain	18,234	5,780	56·2	9·6	16
France	6,777	1,066	3·8	3·6	3
Germany	4,920	1,710	28·6	16·3	4
Russia	477	34	0·3	8·0	...
Austria	128	73	0·6	8·2	...
Italy	2,091	330	0·9	3·0	1
Switzerland	632	101	0·3	3·0	4
Holland and Belg.	514	420	0·2	0·5	4
Denmark	721	99	0·1	1·0	5
Canada	40	80	5·1	63·0	2
Australia	879	55	0·7	13·0	2
Total	35,413	9,748	96·8	9·9	3

Digitized by Google

B.—Friendly Societies of Great Britain.

Nature.	Number.	Members.	Funds.
Friendly . .	15,379	4,692,000	£12,750,000
Provident . .	1,587	716,000	6,337,000
Building . .	1,268	372,000	37,080,000
Total . .	18,234	5,780,000	£56,167,000

Including non-registered societies, the estimated number of members is 7 millions, or one-fifth of the population; 56 per cent. men, and 44 per cent. women. In 10 years the Oddfellows and Foresters have increased 310,000, and their funds over 2 millions sterling.

C.—French Friendly Societies.

Year.	Number of Members.		
	Male.	Female.	Total.
1860 . . .	461,000	70,000	531,000
1870 . . .	719,000	107,000	826,000
1880 . . .	925,000	141,000	1,066,000

The revenue in 1880 was £820,000, of which £670,000 was given to sick and aged members, the balance of £150,000 going to increase the reserve funds, which amount to £3,760,000.

D.—German Friendly Societies.

Year.	Societies.	Members.	Reserve Funds.
1860 . . .	133	31,600	£80,000
1870 . . .	740	314,700	2,200,000
1880 . . .	4,920	1,710,000	8,650,000

The principal societies are those founded on the plans of Mr. Schultz-Delitsch, who commenced his labours in 1864; they are of a co-operative nature, with a "turn-over" which in 1880 exceeded 140 millions sterling. There is also the Journeymen's Union, with 268,000 members, and an income of £1,100,000, supporting widows and orphans.

FROST.

A.D.
1234. Mediterranean frozen: traffic with carts.
1420. Bosphorus frozen.
1468. Wine at Antwerp sold in blocks.
1607. First fair on the Thames.
1658. Swedish artillery crossed the Sound.
1716. Oxen roasted on the Thames.
1740. Third Thames fair, with shops.

Digitized by Google

1766. Snow knee-deep at Naples.
1789. Thermometer Fahrenheit marked 23° below zero at Frankfort, and 36° at Basle.
1809. Moscow, 48° below zero, greatest cold recorded there: mercury frozen.
1829. Jakoutsk, Siberia, 73° below zero on 25th January: greatest cold on any record.
1846. December marked 25° below zero at Pontarlier: lowest ever marked in France.
1855. Fires on Serpentine, Hyde Park.
1864. January, Fahrenheit stood at zero in Turin: greatest cold recorded in Italy.

Captain Parry, in his Arctic explorations, suffered for some time 51 degrees below zero. Frost is diminishing in Canada with the increase of population, viz.:—

HUDSON'S BAY CLOSED.

1828–37	184 days per annum.
1871–80	179 „ „ „

FROZEN MEAT.—An engine of 70 horse-power can refrigerate a chamber for 250 tons of meat from Australia to Europe, using 1 cwt. of coal per hour, or 1¼ ton per day.

FRUIT.—The degrees of sugar in various fruits are:—

Peach	1·6	Apple	7·9
Raspberry . . .	4·0	Mulberry . . .	9·2
Strawberry . . .	5·7	Pear	9·4
Currant	6·1	Cherry	10·8
Gooseberry . . .	7·2	Grape	14·9

A.—IMPORTING COUNTRIES.

Year.	Tons per Annum.		Value (Thousands £).		Lbs. per Inhabitant.	
	U. Kingdom.	France.	U. Kingdom.	France.	U. Kingdom.	France.
1855	43,400	...	1,410	...	3	...
1860	79,100	...	1,840	...	6	...
1865	104,600	...	2,180	...	8	...
1870	107,400	32,100	2,160	540	8	2
1875	152,400	61,100	3,810	1,100	10	4
1880	152,600	169,700	3,260	3,880	10	10

The United States have regularly imported since 1871 about 6 lbs. fruit per inhabitant per annum.

Digitized by Google

B.—Exporting Countries.

Year.	Tons per Annum.			Value in £ (Thousands omitted).			Average Value per Ton.
	Italy.	Spain.	Greece.	Italy.	Spain.	Greece.	
1862	48,300	37,100	44,100	1,240	710	540	£20
1865	72,600	42,300	53,300	1,640	850	730	19
1870	80,800	62,600	52,600	1,100	1,380	720	16
1875	99,100	78,400	89,300	1,620	1,520	1,470	17
1880	98,500	121,200	...	1,360	1,680	...	14

FUEL.

A.—Annual Consumption.

	Millions.		Per Inhabitant.	
	Coal, Tons.	Firewood, Cubic Feet.	Coal, Cwts.	Firewood, Cubic Feet.
United Kingdom	130	60	74	2
France	27	850	14	23
Germany	55	760	24	18
Russia	9	2,770	2	33
Austria	16	1,120	9	29
Italy	3	230	2	8
Spain and Portugal	2	110	2	6
Belgium	12	10	44	2
Holland	3	10	14	2
Sweden and Norway	2	320	5	40
Europe	259	6,240	17	20
United States	70	1,410	28	26
Canada	2	140	9	31
Total	331	7,790	18	22

Pounds of water evaporated by 1 lb. of fuel as follows:—

Straw	1·9	Coke or charcoal	6·4
Wood	3·1	Coal	7·9
Peat	3·8	Petroleum	14·6

FUNDS.—See *Consols.*

FUNERALS.

A.—Chadwick's Table for England.

Paupers	13s.	Gentry	£100
Working-class	£5	Nobility	1,000
Middle-class	£40		

Average: £10 for each interment, or 5 millions per annum.

Digitized by Google

B.—French Official Classification.

Funerals of	Annual Percentage. 1872–74.	1878–79.
Rich persons	3·2	3·5
Middle-class	13·6	14·3
Working-class	83·2	82·2
Total	100·0	100·0

FURNACES (1881):—

	No.	Tons Pig Iron.	Tons per Furnace.
Great Britain	555	8,326,000	14,700
United States	437	4,160,000	9,400
Germany	220	2,790,000	12,700
France	270	1,880,000	7,000
Russia	206	480,000	2,350
Belgium	40	610,000	15,200
Austria	98	520,000	5,300
Sweden	224	390,000	1,760
Total	2,050	19,156,000	9,400

FURNITURE.—Including also carriages, clothing, jewellery, paintings, &c.; the value under this item amounts to half the value of house-property.

A.—Furniture in United Kingdom.

Year.	Millions £.	Per House.	Per Inhab.
1802	190	£70	£12
1830	270	75	13
1850	440	95	16
1860	580	118	20
1870	740	131	24
1880	1,030	158	29

B.—Classification in 1880.

Class.	Houses, Thousands.	Furniture, Millions £.	Average. Per House.	Per Inhab.
1st	23	136	£5,900	£1,080
2nd	261	274	1,050	190
3rd	563	172	307	55
4th	1,423	186	130	23
5th	4,175	262		62 11
Total	6,445	1,030	£158	£29

The above does not include churches or other public buildings.

Digitized by Google

FURS.—The principal fair is at Leipzig: the sales in 1880 were:—

	Thousands of Skins.				
Bear	6	Beaver	80	Fox	180
Sable	54	Black cat	125	Skunk	950
Otter	66	Ermine	160	Squirrel, &c.	4,855

In Russia and Siberia the annual slaughter of fur-bearing animals is as follows:—50,000 martens, 3 million ermines, 15 million marmots, 25 million squirrels.

G

GAELIC.—The number of persons speaking Gaelic in the United Kingdom is as follows:—

	Number.	Ratio to Population, Per Cent.
Ireland	660,000	13
Scotland	232,000	7
Wales	350,000	33
United Kingdom	1,242,000	4

GARRISONS.

A.—British Colonial.

Station.	Men.	Annual Cost.	Per Man.
Mediterranean	11,000	£750,000	£68
West Indies	6,400	470,000	73
Africa	6,600	600,000	91
Ceylon, &c.	3,500	260,000	74
Total	27,500	£2,080,000	£75

The garrison in Ireland varies from 20,000 to 30,000 men. In India it is ordinarily 70,000. In Great Britain from 60,000 to 70,000.

B.—German (1883).

	Men.		Men.
Berlin	17,800	Coblenz	6,400
Metz	14,400	Konigsberg	6,400
Strasburg	9,000	Potsdam	6,600
Mayence	7,700	Madgeburg	6,100
Cologne	7,700	Spandau	4,300

There are 29 smaller garrisons, ranging from 2000 to 4000 men each.

Digitized by Google

GAS.

A.—Cost of Street Lighting.

	Cost, per Annum.	Price per 1000 Feet, Pence.	Cost, per Inhab., Pence.	Candle Power
London	£460,000	45	30	12
Paris	620,000	68	70	13
Rome	24,000	...	20	...
Vienna	43,000	67	14	9
Berlin	53,000	51	13	16
New York	...	120	...	16
San Francisco	59,000	...	67	...
Glasgow	...	48	...	28
Bucharest	20,000	...	24	...
Palermo	20,000	...	23	...
Liverpool	...	42	...	22
Turin	18,000	...	20	...
Florence	14,000	...	22	...
Manchester	...	36	...	22
Buda-Pesth	16,000	...	12	...

B.—Consumption in London and Paris.

	London.		Paris.	
	1860.	1880.	1860.	1880.
Millions cubic feet	8,200	18,100	2,660	8,470
Per inhab. „ „	2,930	4,750	1,610	3,940

The Paris Gas Company in 1880 showed receipts £3,450,000, net profit £1,500,000. Paris has 49,000 street lamps, the other French towns 190,000; total 239,000.

C.—Consumption in United Kingdom.

	London.	Other Towns.	Total.
Millions cubic feet	18,100	53,500	71,600
Per inhab. „ „	4,750	3,100	3,400

The average expenditure for gas is 21 shillings per inhabitant per annum in London, and 10 shillings in other towns. A ton of coal gives 9000 cubic feet of gas.

D.—London Gas and Water Supply.

	Thousands Omitted.		
	Gas.	Water.	Total.
Capital	£13,026	£12,250	£25,276
Income	3,993	2,150	6,143
Expenses	2,610	1,420	4,030
Profit, per annum	1,383	730	2,113

Digitized by Google

GEOLOGY.—Professor Philips gives the following table of strata, and number of organic forms to each stratum :—

	Feet Thick.	Organic Forms per 100 Feet.
Tertiary	2,000	141
Cretaceous	1,100	71
Oolitic	2,500	46
Saliferous	2,000	8
Carboniferous	10,000	5
Primary	20,000	2

A.—FOSSIL REMAINS.

Mammalia	144	Terrestrial plants	500
Reptiles	71	,, animals	330
Fishes	183	Marine plants	40
Insects	74	,, animals	6,065
Conchifera	2,026	Fresh-water plants	40
Gasteropoda	880	,, animals	260
Kephalopoda	788		
Crustacea, &c.	1,970	Total	7,235
Total	6,136		

GIANTS.

A.—ANCIENT.

Name.	Place.	Height, Feet.	Period.
Goliath	Palestine	11·0	B.C. 1063.
Galbara	Rome	10·0	Claudius Cæsar.
Funnam	Scotland	11·5	Eugene II.
De Vallemont	Rouen	17·0	14th century.
Count Bucart	Dauphiny	22·6	16th ,,
Theutobochus	Dauphiny	25·5	16th ,,
Unknown	Palermo	30·0	15th ,,
John Middleton	England	9·3	A.D. 1578.

B.—MODERN.

Name.	Birthplace.	Height, Feet.	Date.
Frederic's Swede	Sweden	8·4	...
Cujanus	Finland	7·9	...
Gilly	Tyrol	8·1	...
Patrick Cotter	Cork	8·7	1806
Chang Gow	Pekin	7·8	1880

GLASS.—Consumption in United Kingdom as follows :—

1801	16,300 tons.
1833	18,200 ,,

In 1880 the consumption of plate glass in Great Britain amounted to 6 million square feet, of which one-sixth was imported, the rest native manufacture.

Digitized by Google

GLOVES.—France makes yearly 26 million pairs, and exports 18 million pairs. In 10 years ending 1880 Great Britain imported 15 million pairs per annum, valued at 1½ million sterling.

GLYCERINE.—Production in 1880:—

	Tons.		Tons.
England	300	Russia	900
France	4,000	Belgium	800
Germany	1,500	Italy	400
Holland	900	Spain	200

GOATS.

	Thousands.		Thousands.
United Kingdom	600	Spain	4,531
France	1,610	Portugal	937
Germany	2,330	Belgium and Holland	343
Russia	2,060	Scandinavia	550
Austria	1,550	Roumania	194
Italy	1,720	Turkey	720
Switzerland	374	South Africa	2,790
Greece	1,840	India	19,000

An ordinary goat gives a quart of milk daily, and lives 10 years. The Turkish breed, known as Angora, produces a fine hair worth 2 shillings per lb.—say 2 lbs. per goat per annum. One-third of the goats in South Africa are of Angora, or mixed breed, the first having been introduced from Smyrna in 1860.

GOITRE.—In France 42,000 persons affected, two-thirds women. It is prevalent in parts of Switzerland and at Mendoza (foot of the Andes), supposed to be caused by snow water.

GOLD.

A.—Production in 500 Years (1830–1880).

	Tons.	Millions £.	Ratio.
United States	2,042	286	19·7
Australia	1,840	258	17·8
Spanish-America	2,220	310	21·5
Brazil	1,040	145	10·0
Russia	1,235	173	12·0
Africa	740	104	7·1
Austria	460	65	4·4
Other countries	778	107	7·5
Total	10,355	1,448	100·0

Digitized by Google

B.—Periods of Production.

A.D.	Tons.	Increase of Period.	Total Value, Millions £.
1600	750	...	104
1700	1,660	910 tons	232
1800	3,570	1,910 „	497
1850	4,750	1,180 „	661
1880	10,355	5,605 „	1,448

C.—Production since 1850.

	Millions £.			
	1851–60.	1861–70.	1871–80.	30 years.
United States	102	98	70	270
Australia	104	82	72	258
Russia	38	40	48	126
Other countries	38	44	50	132
Total	282	264	240	786

D.—Production and Consumption.

Years.	Production, Tons.	Consumption, Tons.			
		Coinage.	Manufacture.	The East.	Total.
1831–40	203	50	180	10	240
1841–50	548	350	200	28	578
1851–60	2,018	1,633	280	100	2,013
1861–70	1,885	1,008	570	300	1,878
1871–80	1,703	849	840	120	1,809
50 years	6,357	3,890	2,070	558	6,518

Years.	Production, Millions £.	Consumption, Millions £.			
		Coinage.	Manufacture.	The East.	Total.
1831–40	28	7	25	1	33
1841–50	77	49	28	4	81
1851–60	282	228	39	14	281
1861–70	264	142	80	42	264
1871–80	240	119	118	17	254
50 years	891	545	290	78	913

For gold movement since 1860 see *Bullion*.

The above table shows that the production since 1831 was not enough, but that the world used up some of previous stock existing, as has likewise occurred with *Silver* (q.v.)

Digitized by Google

E.—Production in 1881.

	Tons.	Value.
United States	46	£6,600,000
Russia	42	5,940,000
Australia	33	4,700,000
Spanish-America	10	1,430,000
Japan, Africa, &c.	6	850,000
Total	137	£19,520,000

The largest nugget ever found was the "Welcome," at Ballarat, Australia, on June 11, 1858; it weighed 2020 oz., and was worth £8376. Australian ore has averaged only 30 shillings per ton, Californian £2, and the earnings of miners £85 and £90 respectively per annum.

Gold bearing the "hall-mark" must have at least 18 carats, representing a value of 64 shillings per ounce: the British standard is 22 carats, worth about 78 shillings (£3, 17s. 10d.) per ounce. The wear and tear of coin amounts to 1 ton of gold per annum. Allowing also for loss by shipwreck, fire, &c., the stock of existing gold is about 9500 tons, or 2½ times the amount of coin. Jewellers melt down nearly 100 tons per annum, of which one-third is in France, one-fifth in England.

GRADIENTS.

A.—Railways with Heavy Gradients.

Line.	Situate	Maximum Gradient, per Cent.	Maximum Height, in Feet.
Florence-Bologna	Apennines	2½	1,980
Mont Cenis	Alps	3	4,290
Genoa-Turin	„	3½	1,320
Darjeeling	Himalayas	4	...
Poti-Tiflis	Caucasus	4½	...
Einsiedeln	Switzerland	5	2,910
Oroya	Andes	6	15,840
Zurich-Utliberg	Switzerland	7	...
Righi	„	24	...

The Zurich-Utliberg is the maximum of simple adhesion, the Righi being furnished with clip-brakes. The Vesuvius line has one gradient said to be as steep as a ladder (63), the Righi being compared to a staircase. The Philadelphia and Pittsburg has an inclined plane of 46 in 100, length 840 feet.

Digitized by Google

B.—Resistance (at 25 Lbs. per Ton, Level Way).

Gradient.	Resistance.	Gradient.	Resistance.
1 per cent.	47 lbs. per ton	5 per cent.	137 lbs. per ton
2 „	70 „ „	8 „	205 „ „
3 „	92 „ „	10 „	250 „ „

C.—M'Neill's Mail Coach Dynamometer.

Gradient.	Force Required at Miles per Hour. 6 Miles.	8 Miles.	10 Miles.
Level	111 lbs.	120 lbs.	128 lbs.
2½ per cent.	160 „	166 „	172 „
4 „	213 „	219 „	225 „
5 „	268 „	296 „	318 „

GRAIN.

A.—Crops of the World.

	Millions of Acres.	Millions of Bushels.	Value, Millions £.	Bushels per Acre.
Wheat	154	2,076	540	13
Oats	86	1,794	205	21
Barley	47	819	133	17
Rye	115	1,408	232	12
Maize, &c.	103	2,300	236	22
Total	505	8,397	1,346	17

B.—Acreage under Grain.

	Millions of Acres.				
	Wheat.	Oats.	Barley.	Other Kinds.	Total.
United Kingdom	3·0	4·2	2·5	0·8	10·5
France	17·1	9·0	3·5	8·5	38·1
Germany	4·5	9·1	4·0	17·1	34·7
Russia	29·0	33·0	16·2	82·8	161·0
Austria	8·5	7·1	5·0	15·5	36·1
Italy	11·5	1·0	1·0	5·5	19·0
Spain and Portugal	9·0	1·0	4·0	5·0	19·0
Belgium and Holland	1·0	1·0	...	2·0	4·0
Scandinavia	0·5	2·5	1·0	3·0	7·0
Roumania, &c.	4·0	0·5	2·0	4·0	10·5
Europe	88·1	68·4	39·2	144·2	339·9
United States	35·2	15·0	2·0	65·0	117·2
Canada	2·0	2·0	0·5	0·5	5·0
Australia	3·0	...	0·5	0·5	4·0
India	19·0	...	...	...	19·0
Japan	1·0	...	2·0	1·0	4·0
Egypt	1·0	...	1·0	1·0	3·0
Algeria	2·0	...	2·0	...	4·0
South America	3·0	...	...	6·0	9·0
The World	154·3	85·4	47·2	218·2	505·1

Digitized by Google

C.—Grain Crops of Countries.

	Millions of Bushels.					Value, Millions £.
	Wheat.	Oats.	Barley.	Other Kinds.	Total.	
United Kingdom	74	130	90	28	322	68
France	272	220	80	154	726	161
Germany	94	180	86	274	634	129
Russia	210	520	130	850	1,710	266
Austria	115	130	80	223	548	110
Italy	140	20	20	113	293	65
Spain and Portugal	145	13	76	91	325	68
Belgium and Holland	24	35	...	46	105	21
Scandinavia	7	76	37	50	170	34
Roumania, &c.	85	10	40	90	225	45
Europe	1,166	1,334	639	1,919	5,058	967
United States	440	405	40	1,585	2,470	207
Canada	45	55	15	15	130	22
Australia	35	...	15	10	60	13
India	270	...	...	...	270	67
Other countries	120	...	110	179	409	70
The World	2,076	1,794	819	3,708	8,397	1,346

D.—Production and Consumption of Grain.

	Millions of Bushels.		Bushels per Inhab.	
	Production.	Consumption.	Production.	Consumption.
United Kingdom	322	607	9·1	17·3
France	726	895	20·4	25·3
Germany	634	750	14·1	16·7
Russia	1,710	1,500	22·8	20·0
Austria	548	516	14·8	13·9
Italy	293	298	10·7	10·9
Spain and Portugal	325	325	16·2	16·2
Belgium and Holland	105	145	11·1	15·5
Scandinavia	170	160	20·1	18·9
Roumania, &c.	225	205	32·1	29·3
Europe	5,058	5,401	16·8	18·0
United States	2,470	1,740	48·8	34·1
Canada	130	120	31·2	28·8
Australia	60	40	22·2	14·8
Algeria	20	15	6·6	5·0
Argentine Republic	16	12	5·3	4·0
Other countries	643	1,069	...	...
Total	8,397	8,397	...	...

Digitized by Google

E.—Grain Crops of United Kingdom.

(*Average for* 10 *Years ending* 1880).

	United Kingdom, Acres.	Millions of Bushels. Great Britain.	Ireland.	United Kingdom.
Wheat . .	3,468,000	80	4	84
Oats . . .	4,153,000	113	55	168
Barley . . .	2,704,000	83	8	91
Rye . . .	61,000	2	...	2
Total . .	10,386,000	278	67	345

F.—Grain Imports into United Kingdom.

Period.	Annual Average. Million Bushels.	Lbs. per Inhab.	Period.	Annual Average. Million Bushels.	Lbs. per Inhab.
1761–80. .	1	5	1831–40. .	8	18
1781–90. .	1	5	1841–50. .	31	64
1791–1800 .	4	15	1851–60. .	78	154
1801–10. .	5	17	1861–70. .	127	238
1811–20. .	4	12	1871–80. .	229	374
1821–30. .	5	12	1881 . .	256	409

G.—Grain Imports into France—Value.

Period.	Annual Average.	Per Inhabitant.
1841–60	£1,410,000	10 pence
1861–70	3,110,000	21 ,,
1871–80	10,400,000	72 ,,

The above shows net imports—that is, after deducting values of exported grain in years of surplus.

H.—Grain Exports of United States.[1]

Period.	Annual Average. Million Bushels.	Lbs. per Inhab.	Period.	Annual Average. Million Bushels.	Lbs. per Inhab.
1821–40. .	6	26	1861–70. .	48	76
1841–50. .	15	41	1871–80. .	147	211
1851–60. .	29	60	1881 . .	285	312

I.—Grain Crops of United States.

	Million Bushels. 1850.	1860.	1870.	1880.
Wheat . . .	101	173	288	460
Barley . . .	5	16	30	44
Oats	147	173	282	408
Rye	14	21	17	20
Buckwheat . .	9	18	10	12
Maize . . .	592	839	761	1,755
Total . . .	868	1,240	1,388	2 699

Digitized by Google

K.—Grain Crops and Exports of Russia.

Period.	Million Bushels, per Annum.			Bushels, per Inhabitant.		
	Crop.	Export.	Home Consump.	Crop.	Export.	Home Consump.
1800–13 .	890	10	880	22	¼	21¾
1834–40 .	1,040	27	1,013	21	½	20½
1840–47 .	1,210	32	1,178	23	½	22½
1857–63 .	1,270	34	1,236	20	½	19½
1871–80 .	1,730	146	1,584	22	2	20

L.—Components of Grain.

	Starch.	Nitrogen.	Water.	Various.	Total.
Maize . .	71·2	9·9	13·5	5·4	100
Rye . .	73·2	8·0	15·0	3·8	,,
Wheat . .	69·6	12·2	14·4	3·8	,,
Barley . .	74·3	6·3	15·0	4·4	,,
Rice . .	79·5	6·3	13·0	1·2	,,
Buckwheat .	79·9	2·6	12·8	4·7	,,

GRANITE is worth 4 shillings per cubic foot, and requires a crushing force of 24,500 lbs. to a half-inch cube.

GRAVITY, SPECIFIC.

A.—Compared with Water.

Liquids.		Timber.		Metals.	
Water	100	Cork	24	Zinc	719
Sea water . .	103	Poplar . . .	38	Cast iron . .	721
Dead Sea . . .	124	Fir	55	Tin	729
Alcohol . . .	84	Cedar . . .	61	Bar iron . .	779
Olive oil . . .	92	Pear	66	Steel . . .	783
Turpentine . .	99	Walnut . . .	67	Copper . . .	869
Wine	100	Cherry . . .	72	Brass . . .	840
Urine	101	Maple . . .	75	Silver . . .	1,051
Cider	102	Apple . . .	79	Lead . . .	1,135
Beer	102	Ash	84	Mercury . .	1,357
Woman's milk .	102	Beech . . .	85	Gold	1,926
Cow's ,, .	103	Mahogany . .	106	Platina . . .	1,950
Goat's ,, .	104	Oak	117		
Porter	104	Ebony . . .	133		

A gallon of wine or water weighs 10 lbs.

Precious Stones.

Emerald . .	277·5	Diamond . .	353·0	Garnet . . .	406·3
Crystal . . .	265·3	Topaz . . .	401·1	Ruby . . .	428·3

Digitized by Google

SUNDRIES.

Indigo	77	Peat	133	Porcelain	226
Gunpowder	93	Opium	134	Stone	252
Butter	94	Honey	145	Marble	270
Ice	117	Ivory	183	Granite	278
Clay	120	Brick	200	Chalk	279
Coal	130	Sulphur	203	Glass	289

B.—WEIGHT IN CUBIC FEET.

	Lbs. per Cub. Ft.	Cub. Ft. per Ton.		Lbs. per Cub. Ft.	Cub. Ft. per Ton.
Cork	15	150	Peat	80	28·0
Cedar	36	62	Brick	120	19·0
Beech	51	44	Stone	150	15·0
Butter	56	40	Granite	166	13·5
Water	62	36	Glass	172	13·0
Mahogany	66	34	Iron	470	4·8
Ice	70	32	Copper	520	4·3
Oak	70	32	Silver	630	3·6
Clay	72	31	Lead	680	3·3
Coal	80	28	Gold	1,155	2·0

GREENBACKS.—Paper money of the United States, inconvertible from 1862 till December 1879.

Year.	Table of Value Compared with Gold.			
	Maximum.	Minimum.	Average.	Value of $100.
1862	98	75	88	£18 6 0
1863	79	62	69	14 6 6
1864	64	39	49	10 4 0
1865	74	46	64	13 6 4
1866	79	66	71	14 15 0
1867	74	70	72	14 19 0
1868	74	69	72	14 19 0
1869	82	72	75	15 12 0
1870	90	82	87	18 2 0
1871	92	87	90	18 14 0
1872	92	87	89	18 10 0
1873	92	85	88	18 6 0
1874	91	88	90	18 14 0
1875	89	85	87	18 2 0
1876	93	87	90	18 14 0
1877	97	94	96	19 19 0
1878	...	...	98	20 7 0
1879	100	100	100	20 16 0

The average for 10 years ending 1870 was 75, and for the following decade 93.

Digitized by Google

GUANO.—The Peruvian Government exported from the Chincha Islands between 1850 and 1880 more than 12 million tons, worth 110 millions sterling. Great Britain paid 55 millions for 5,200,000 tons since 1855.

GULF STREAM.—Equal to a river 50 miles wide, 1000 feet deep, current 4 miles an hour, with a temperature of 65° Fahrenheit, cooling down to 40° as it gets north.

GUNPOWDER.

	Saltpetre.	Charcoal.	Sulphur.	Total.
English	75	15	10	100
French	75	13	12	100
German	75	11	14	100
Russian	74	14	12	100
Austrian	72	17	11	100
Spanish	76	11	13	100
Swedish	75	16	9	100.
Chinese	76	14	10	100.
American	75	13	12	100.
Sporting	77	13	10	100.

GYPSIES.—The number in Europe reaches 712,000, viz. :—

Great Britain	18,000	Austria	197,000
Russia	15,000	Roumania	193,000
Scandinavia	7,000	Turkey	200,000
Spain	40,000	Germany, &c.	42,000

H

HAIL-STORMS.

1656, July 20th, Norwich; wrecked houses and killed many persons.
1697, May 4th; killed sheep in many parts of England.
1775, May 13th, Murcia, Spain; hailstones like oranges, weighing 20 oz.
1844, in Languedoc, pieces of ice fell, weighing 11 lbs.
1874, New Jersey, U.S., hailstones like turkey eggs.

Damage to crops in France by hail since 1850 has averaged £1,420,000 per annum.

HANK.—A measure of yarn; 840 yards. "Yarn of sixties" means 60 hanks to the lb., and so of others.

HARBOURS.—See *Docks.*

Digitized by Google

HARES AND RABBITS.—About 30 millions are killed every year in the United Kingdom, worth £2,200,000.

HATS.—There are 12 million silk hats made annually in the United Kingdom, worth 4 millions sterling. The most costly hats in the world are those made at Panama, of straw, which take six months to make, and are sold at £5 each.

HAY.

	Million Tons.	Value, Millions £.	Tons per Head of Cattle.
United Kingdom	4	16	0·25
France	14	32	0·80
Germany	26	60	1·15
Russia	20	20	0·40
Austria	15	30	0·80
Italy	3	6	0·60
Spain and Portugal	2	4	0·27
Belgium and Holland	3	8	0·85
Scandinavia	7	14	1·12
Europe	94	190	0·64
United States	36	54	0·66
Total	130	244	0·65

In the above table all kinds of farm-stock are reduced to a common denominator, as already laid down in *Cattle*.

HEAT.

A.—Scale in Degrees Fahrenheit.

Degree.		Degree.	
32	Ice melts.	594	Lead melts.
50	Temperature of globe.	1,140	Heat of common fire.
98	Blood-heat.	2,233	Brass melts.
174	Alcohol boils.	3,479	Iron melts.
212	Water boils.		

B.—Specific Heat of Minerals (Water being 1000).

Lead	29	Zinc	93	Glass	117
Mercury	33	Copper	95	Sulphur	188
Silver	56	Iron	110		

C.—Highest Temperature recently Marked.

Place.	Date.	Degrees Fah. (Shade).
London	July 15, 1881	95½
Naples	„ 25, „	96
Paris	„ 15, „	100½
Rio Janeiro	December, 1880	103
Adelaide, S.A.	January, 1881	114

Digitized by Google

HEIGHT.

	Feet.		Feet.
Cologne Cathedral . . .	528	Freyburg Cathedral . .	412
St. Nicholas, Hamburg .	475	Antwerp „ . .	406
St. Peter's, Rome . . .	472	Florence „ . .	393
Strasburg Cathedral . .	468	St. Paul's, London . . .	366
Pyramid of Cheops . . .	452	Milan Cathedral . . .	360
St. Stephen's, Vienna . .	445	Brussels Town-hall . .	355
Amiens Cathedral . . .	440	Invalides, Paris	346

HEIGHT OF MEN.—See *Anthropometry.*

HEMP.

A.—Production (Thousands of Tons).

Austria . . .	110	Russia . . .	60	Holland . . .	50
Italy	90	France . . .	50	Manilla, &c. . .	65

B.—Consumption in Great Britain.

Year.	Tons.	Value per Ton.	Year.	Tons.	Value per Ton.
1810 . .	48,000	£58	1860 . .	35,200	£18
1830 . .	26,500	25	1870 . .	71,300	38
1840 . .	30,100	27	1880 . .	73,400	29
1850 . .	54,200	30	1881 . .	78,800	30

HENS.—The average number of eggs laid yearly is 80 per hen.

	Million Hens.	Million Eggs.	Annual Value of Eggs and Chickens.
United Kingdom .	24	2,000	£9,300,000
France . . .	47	3,700	14,200,000
Germany . .	36	3,000	12,400,000
Austria . . .	34	2,800	11,200,000
Italy . . .	20	1,600	6,500,000

Hen-eggs usually form 80 per cent. of all eggs in ordinary use. The food of hens costs about 50 per cent. of the value they produce yearly. Mr. Baker, of New York, who is supposed to be "the chicken-king of the world," hatches yearly 250,000 chickens by steam.

HERRING-FISHERY.

Fishers.	Tons Herrings.	Value.
Scotch	140,000	£1,700,000
English	80,000	950,000
Irish	20,000	240,000
French	42,000	550,000
Norwegian	60,000	700,000
Canadian	48,000	600,000
Total . . .	390,000	£4,740,000

Digitized by Google

About 10,000 herrings go to a ton, a British barrel containing 1000, a Norwegian 500 fish. The number of men engaged in herring-fishing is 180,000, who catch on an average 22,000 fish each. See *Fisheries.*

HIDES.—The importation into the United Kingdom shows thus :—

Year.	Millions of Lbs. Import.	Export.	Consumption.	Made into Leather, Millions Lbs.
1850 . . .	68	13	55	70
1860 . . .	98	28	70	87
1870 . . .	145	39	106	132
1881 . . .	165	50	115	144

British hides will be found included under *Leather.*

HOLIDAY-TRAFFIC.—During the Christmas holidays of 1882, the railways brought to London 260,000 hampers with presents from friends in the country, and conveyed 138,000 passengers from London to Scotland, Ireland, Manchester, Birmingham, &c.

HOMESTEAD GRANTS.—In 1862 the United States law was passed to encourage settlers from Europe, whereby lots of ¼ square miles or 160 acres are given to immigrants, on condition of 5 years' occupation, the fees for title-deeds seldom exceeding £3 sterling. In this manner the American Government has in 20 years given away 67 million acres to 420,000 immigrant families.

In Canada similar grants are made of 200 acres to the head of a family, and 100 acres to each male adult, subject to these conditions :—(1.) To build a log-hut or house not less than 16 × 20 feet. (2.) To reside for 6 months each year during 5 years on the farm. (3.) To cultivate at least 15 acres in every 100.

Free grants are likewise given in Australia to any settlers not Chinamen; and in Algeria, only to settlers of French extraction.

HOPS.

	Acres.	Crop, Tons.	Value.
England . . .	67,000	26,000	£3,120,000
Germany . . .	62,000	19,000	2,340,000
France . . .	9,000	4,500	550,000
United States . . .	10,000	5,000 .	. 600,000

Germany consumes only three-fourths of her crop, but England has to import annually 7000 tons, her consumption averaging 33,000 tons.

Digitized by Google

HORSES.—There are 52 million horses, representing a value of 579 millions sterling:—

	Horses (Thousands).	Per 100 Inhab.		Horses (Thousands).	Per 100 Inhab.
United Kingdom	2,906	8	Denmark . .	352	18
France . . .	2,833	8	Sweden . .	466	11
Germany . . .	3,360	7	Norway . .	152	8
Russia	16,200	21	Greece . . .	97	6
Austria . . .	3,760	10	Roumania . .	550	10
Switzerland . .	110	4	United States	10,838	20
Italy	658	2	Canada . .	866	20
Spain	590	4	Australia . .	1,605	39
Portugal . . .	70	2	River Plate .	5,150	175
Holland . . .	280	7	Cape Colony .	241	23
Belgium . . .	283	5	Algeria . .	350	117

A horse lives 25 years, and weighs 1000 lbs. An omnibus or tramway horse lasts only 4 to 5 years. The society for eating horse-flesh, founded at Paris in 1866, consumes over 2 million lbs. yearly, at a cost of 2½ pence per lb.—the average yield of meat being 450 lbs. per horse.

HORSE-POWER.—One horse-power will raise 10 tons per minute a height of 12 inches, working 8 hours a day. This is about 5000 foot-tons daily, or 12 times a man's work.

(1.) Mail-coach horses: 4 will draw a coach, say 2 tons, at the rate of 10 miles an hour, for 6 days every week, and last 5 years.

(2.) Canal horses: 1 will draw a barge of 25 tons, resistance 108 lbs., at 2½ miles per hour.

(3.) Waggoners' horses: 1 will easily draw a ton 30 miles in a day of 12 hours.

Sims mentions a Devonshire cart-horse, 15 hands, 1200 lbs., which gave an average of 8000 foot-tons daily.

The horse-power of Niagara is 3¼ million nominal, equal to 10 million horses effective, and valued at £15,000,000 per annum, if conveyed by electricity to New York.

The measurement of horse-power, that is, of raising a certain weight 12 inches per minute during 8 hours daily, is variously given by the best authorities, viz.:—

	Lbs.		Lbs.
Smeaton . . .	22,000	Desaguliers . . .	27,500
Sims	23,400	Watt	32,000
Tredgold . . .	27,500	Saussure . . .	34,000

Digitized by Google

HOSPITALS.

A.—Municipal Hospitals.

	Subsidy.	Pence per Inhab.		Subsidy.	Pence per Inhab.
Paris	£358,000	42	Nantes	£15,000	30
Berlin	70,000	16	Florence	14,000	21
New York	34,000	7	Venice	14,000	25
Copenhagen	32,000	36	Stockholm	11,000	16
Leipsic	31,000	55	Toulouse	10,000	18
Marseilles	24,000	16	Turin	10,000	13
Vienna	23,000	5	Buda	9,000	6
Genoa	23,000	27	Christiania	8,000	22
San Francisco	20,000	21	Rennes	8,000	21
Rouen	19,000	44	Havre	5,000	11
Bordeaux	17,000	18	Frankfort	4,000	8

B.—Principal Hospitals in United Kingdom.

Hospitals.	Founded A.D.	Beds.	Annual Patients.	Death-Rate.
St. Bartholomew's	1547	600	5,500	6·0
St. Thomas's	1548	360	3,200	12·0
Guy's	1722	620	5,600	9·7
Bristol	1735	270	2,600	7·0
Leicester	...	220	2,000	5·0
Edinburgh	1736	500	4,500	10·5
Aberdeen	1739	240	2,100	6·5
Manchester	1753	330	3,000	10·8
Liverpool	...	330	3,000	7·2
Leeds	1767	330	3,000	7·0
Birmingham	1778	300	2,700	8·0
Glasgow	1794	630	5,700	10·7
Misericordia (Dublin)	1855	230	2,100	6·5
London (Whitechapel)	...	790	7,170	...

Death-rate averages 6½ per cent. in Irish hospitals, 8 in English, and 9½ per cent. in Scotch. There are in the United Kingdom 496 hospitals, with 16,400 beds, relieving 145,000 sick yearly, who are attended by 820 physicians. Total expenditure £1,200,000, or £8 per patient, equal to 5 shillings a day for each bed occupied. Death-rate is lowest in small hospitals, viz. :—

Less than 100 beds	6·5
100 to 200 beds	7·1
Over 200 beds	8·0

In the year 1800 there were but 51 hospitals in Great Britain and Ireland.

Digitized by Google

The London Charities report for 1881 showed that the city hospitals received £503,000, being 82 in number. This is equal to a subsidy of 3 shillings per inhabitant annually to the hospitals, as compared with other cities in Table A.

C.—British and French Hospitals Compared.

	British.	French.
Number of beds	16,400	72,100
Admission	145,000	438,000
Expenditure	£1,200,000	£2,482,000
Number of physicians	820	1,832
Beds, per physicians	20	40
Daily cost per bed, pence	56	38

The average of days to each patient are :—

Dublin	27	Glasgow	30	All England	31
Paris	28	Guy's	35	All France	35

The average death-rate on the Continent is 13 per cent.

D.—New York Hospitals (1882).

	Revenues.		Patients.
Subsidies	£34,000	Free	6,945
Pay patients	16,000	Pay	2,220
Donations	38,000	Total	9,165
Receipts	£88,000		
Expenditure	£92,000	Days free	262,000
		Total days	368,000

The average was 37 days to each free, and 48 to each paying patient, and the cost in general £10 per patient, or 5 shillings per day, which exceeds the averages above given in Table C.

E.—Hospitals compared with Population.

	Admitted to Hospital.	Admissions, per 1000 Inhab.
United Kingdom	145,000	4
France	438,000	12
Spain	243,000	15
New York	9,200	8

See *Sickness*.

Digitized by Google

HOUSES.

A.—Houses and Value.

	Houses, Thousands.	Value, Millions £.	Average per House.	Do. per Inhab.	Inhab. per House.
United Kingdom .	6,452	2,280	£352	£65	5·4
France	8,813	1,890	213	50	4·3
Germany	5,770	1,470	255	33	7·7
Russia	9,150	880	96	11	9·1
Austria	6,290	770	124	21	5·9
Italy	4,420	656	143	23	6·3
Spain and Portugal	3,810	420	111	21	5·4
Belgium	1,060	140	132	25	5·1
Holland	720	116	155	29	5·5
Scandinavia . . .	1,200	130	109	18	6·9
Europe . . .	47,685	8,752	£185	£29	6·8
United States . .	8,956	2,780	311	53	5·6
Total	56,641	11,532	£203	£52	6·6

The above table is not official.

B.—House-property, Urban and Rural.

	Value, Millions £.		Ratio.		House Value per Inhab.		
	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	General.
U. Kingdom .	1,206	1,074	53	47	£89	£48	£65
France . . .	502	1,388	26	74	71	44	50
Germany . .	330	1,140	22	78	45	30	33
Russia . . .	120	760	14	86	24	9	11
Austria . . .	140	630	18	82	56	18	21
Italy	202	454	30	70	44	18	23
Spain and Port.	97	323	23	77	41	18	21
Belgium . . .	53	87	38	62	36	22	25
Holland . . .	48	68	41	59	42	24	29
Scandinavia .	34	96	26	74	41	12	18
Europe . .	2,732	6,020	31	69	£56	£22	£29

The above table is not official.

C.—Value of Houses Built per Annum.

	Amount.	Shillings per Inhab.		Amount.	Shillings per Inhab.
Belgium . .	£4,900,000	15	New York .	£5,600,000	88
Buenos Ayres	720,000	61	Montevideo	230,000	39
France . .	32,600,000	17	Toronto . .	320,000	69
Glasgow . .	1,630,000	52	Turin . .	250,000	22
London . .	15,300,000	77	U. Kingdom	68,000,000	39

Digitized by Google

D.—Houses in Great Britain (without Ireland).

Year.	Houses in Thousands.		Rental, Millions £.	Rent per House.	Rent per Inhab.
	Number.	Increase from 1821.			
1821 . .	2,293	...	19·4	£8·4	£1·4
1831 . .	2,695	402	27·1	10·0	1·7
1841 . .	3,257	964	38·5	11·8	2 1
1851 . .	3,648	1,355	44·3	12·1	2·2
1861 . .	4,139	1,846	58·2	14·0	2·5
1871 . .	4,672	2,379	74·5	16·0	2·9
1881 . .	5,475	3,182	114·2	21·0	3·8

House-property has apparently risen in value faster in London than throughout England. There is a house in Lombard Street, the rent of which was £25 a year in 1665, and the building on the same site is now rented for £2600 a year, under lease from 1877.

E.—Classification in Great Britain (1881).

Class.	Houses, Thousands.	Rental, Millions £.	Average Rental.	Ratio of Houses.
1	21	14·0	£665	0·4
2	238	28·5	120	4·3
3	512	17·9	35	9·3
4	1,294	19·4	15	23·4
5	3,410	34·4	10	62·6
Total .	5,475	114·2	£21	100·0

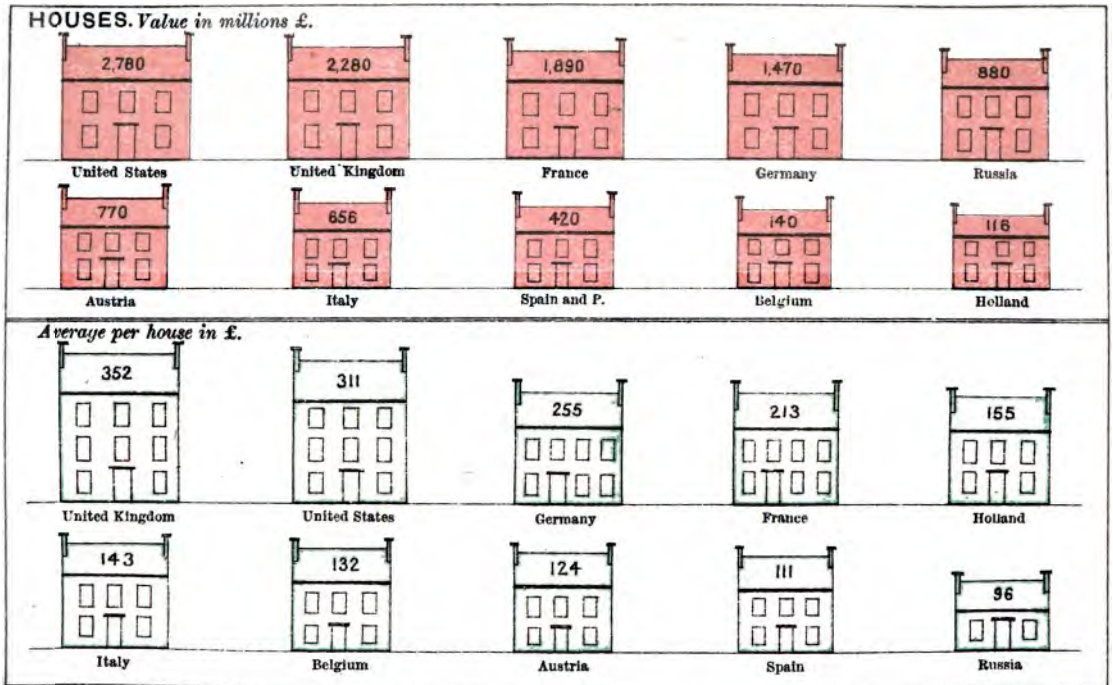
F.—House-property of United Kingdom (1883).

	Millions £.		House-prop. per Inhab.
	Rental.	Capital Value.	
London . . .	31·6	620	£158
Provinces . .	73·4	1,387	66
Scotland . .	11·8	213	60
Ireland . . .	3·3	60	12
Total . .	120·1	2,280	£65

The increase in the value of house-property varies from 50 to 70 millions sterling per annum, that is, on an average, 35 per cent. of the increase of national wealth. It is not merely the number of houses growing faster than population, but also a higher ratio of those paying house-duty, viz. :—

Year.	Subject to House-duty.	Ratio to Total Number.
1851 . . .	434,000	12 per cent.
1871 . . .	797,000	17 „
1881 . . .	1,002,000	18 „

Digitized by Google



Digitized by Google

Digitized by Google

The average value per house in Great Britain has risen from £216 in 1851 to £380 in 1881 : this is not including Ireland.

G.—Houses of Great Britain in 1812 (Colquhoun).

Rental.	Number. Urban.	Rural.	Total.	Value (Millions £.)
Over £100 . .	6,500	500	7,000	18
£40 to £100 . .	30,000	6,000	36,000	41
£20 to £40 . .	100,000	20,000	120,000	72
£10 to £20 . .	200,000	100,000	300,000	89
Under £10 . .	579,000	995,000	1,574,000	110
Total . .	915,500	1,121,500	2,037,000	330

H.—Houses of United Kingdom in 1832.

	Number.	Aggregate Rental.	Value (Millions £).	Ratio.
Over £40 . .	84,400	£5,100,000	97	17
£20 to £40 . .	130,400	4,150,000	80	14
£10 to £20 . .	229,600	5,200,000	99	17
Under £10 . .	3,788,000	15,350,000	295	52
	4,232,400	29,800,000	571	100

I.—Houses of England and Wales in 1862.

Annual Rental.	Number.	Aggregate Rental.	Value (Millions £.)	Ratio.
Over £1,000 .	233	£440,000	8	0·7
£500 to £1,000	924	650,000	12	1·1
£200 to £500 .	8,633	2,860,000	51	4·5
£100 to £200 .	32,806	4,830,000	86	7·6
£50 to £100 .	101,948	7,120,000	128	11·3
£30 to £50 . .	169,920	6,880,000	124	11·0
£20 to £30 . .	205,528	5,110,000	92	8·3
Under £20 . .	3,624,608	34,700,000	626	55·5
Total . . .	4,144,600	62,590,000	1,127	100·0

K.—House-Valuation in Cities.

	Millions £.	Per Inhab.		Millions £.	Per Inhab.
London . .	620	£158	Munich . .	15	£68
Paris . . .	286	130	Rome . . .	14	48
Liverpool .	66	120	Sheffield .	18	63
Manchester .	62	109	Buda . .	44	120
Glasgow . .	54	106	Bristol . .	16	77
Birmingham	28	70	Turin . .	10	52
Newcastle .	14	97	Milan . .	13	41
Brighton . .	12	96	Sydney .	15	140
Leeds . . .	22	71	Melbourne	10	140

Sydney and Melbourne do not include the suburbs, in which the bulk of population resides.

Digitized by Google

L.—Houses in France.

Year.	Houses.	Windows per House.	Inhabitants per House.
1836	6,805,000	4·5	4·93
1852	7,524,000	5·0	4·77
1882	8,813,000	5·6	4·28

This shows that the houses have improved 25 per cent. as regards the number of windows, and the population have 15 per cent. more houses per 1000 inhabitants than they had 50 years ago. The classification of houses in 1868 was as follows:—

Class.	Houses.	Ratio.
Gentry	158,000	2·2
Commercial, &c.	583,000	7·9
Tradesmen	2,167,000	29·4
Operatives, &c.	4,453,000	60·5
Total	7,361,000	100·0

M.—Houses in Paris (1882).

Rent.	Number.	Rental.	Value (Millions £.)	Ratio.
Over £500	1,920	£1,100,000	17	6·0
£160 to £500	13,100	4,200,000	63	22·0
£40 to £160	65,250	6,300,000	94	32·7
£15 to £40	135,400	2,800,000	42	14·8
Under £15	469,000	4,700,000	70	24·5
Total	684,670	£19,100,000	286	100·0

The above shows the "logements" or tenancies, but the actual number of houses is less than half. The official valuation deducts 25 per cent. from the above for repairs, &c.

N.—Growth of House-Property in Paris.

Year.	Millions £.	Per Inhab.
1848	81	£82
1860	188	109
1870	223	122
1882	286	128

O.—Houses in United States.

Year.	Houses.	Inhabitant, per House.	Relative Increase, 30 Years. Houses.	Population.
1850	3,362,000	6·9	100	100
1860	4,970,000	6·3	150	135
1870	7,043,000	5·5	211	166
1880	8,956,000	5·6	270	218

Digitized by Google

HUNGER AND WANT.—Deaths recorded in 1879 from this cause were :—

	Number.	Per 1,000 Deaths.
London . . .	101	1·2
England . . .	312	0·6
Ireland . . .	3,789	37·6
France . . .	260	0·3

In England there were 60 male to 40 female victims; in France 85 to 15. In London the real number of victims was much greater, many of the suicides resulting from hunger.

HUNTING IN FRANCE.—The number of licenses compares with population thus :—

Year.	Licenses.	Per 1,000 Inhabitants.
1846	145,000	4·1
1859	249,000	6·9
1869	328,000	8·6
1879	347,000	9·2

See *Wild Beasts.*

I

ICE.—Norway exports 160,000 tons yearly, valued at 7 shillings per ton, mostly for England. Lake Wenham, in the United States, produces 300,000 tons, of which one-fourth is shipped from Boston for Europe, valued at 12 shillings per ton. Ice is 17 per cent. heavier than water.

ILLEGITIMACY.

A.—Percentage of Illegitimate Births.

England . . .	4·5	Austria . . .	12·9	Denmark . . .	11·2
Scotland . . .	8·9	Italy	6·8	Sweden . . .	10·2
Ireland . . .	2·3	Switzerland .	4·6	Norway . . .	8·5
France . . .	7·2	Spain & Portugal	5·5	Greece	1·6
Germany . . .	8·4	Belgium . .	7·0	United States .	7·0
Russia	3·1	Holland . .	3·5	Canada . . .	5.0

B.—England and France Compared.

Years.	England.	France.
1841–50	6·7	7·2
1851–60	6·5	7·4
1861–70	6·1	7·5
1871–80	5·1	7·3

Digitized by Google

IMMIGRATION.—The Australian colonies have expended 8½ millions in promoting immigration, viz. :—

	Expended.	Immigrants.	Per Head.
New Zealand . .	£1,950,000	101,000	£19
Victoria . . .	2,880,000	167,000	17
Queensland, &c. &c. .	3,600,000	202,000	18
	£8,430,000	470,000	£18

The value of an able-bodied immigrant, male or female, is estimated by Engel at £200, in the United States at £166, by Dr. Farr at £246, in Buenos Ayres at £240, and in Australia at £260. Each immigrant, big and little, increases the Australian revenue by £4 a year, equal to £10 a year for those between 20 and 60 years of age. See *Emigration.*

IMPORTS.

A.—VALUE OF NET IMPORTS (1881–82).

	Millions £.	Per Inhab. Shillings.		Millions £.	Per Inhab. Shillings.
U. Kingdom .	348	196	Scandinavia	36	84
France . . .	199	104	U. States .	151	55
Germany . .	148	65	India . .	38	4
Russia . . .	62	14	Egypt . .	7	30
Austria. . .	64	33	China . .	25	2
Italy . . .	53	36	Japan . .	8	5
Spain . . .	20	25	Australia .	63	420
Portugal . .	8	35	Canada . .	25	110
Belgium . .	67	246	S. America	42	31
Holland . .	76	375	S. Africa .	9	166

B.—BRITISH IMPORTS, PROGRESS OF.

Year.	Reign.	Thousands £.	Per Inhab. Shil.	Year.	Reign.	Thousands £.	Per Inhab. Shil.
1355	Edward III.	120	1	1801	George III.	31,420	40
1573	Elizabeth .	2,100	9	1820	George IV.	36,515	35
1614	James I. .	2,140	8	1835	William IV.	48,912	38
1687	James II. .	4,200	15	1840	Victoria. .	52,000	39
1713	Anne. . .	6,850	24	1850	„	95,000	69
1750	George II. .	7,290	21	1860	„	182,000	125
1761	George III.	10,292	28	1870	„	259,000	167
1775	„	14,816	37	1882	„	348,000	196

The amounts above are according to the value in weight of silver. They stand for England and Wales down to 1800, and afterwards for the United Kingdom. They are net imports, exclusive of goods in transit.]

Digitized by Google

C.—British Imports, Value.

	Gross Imports (Millions £).			Consumption (Millions £).		
	1860.	1870.	1880.	1860.	1870.	1880.
Cotton . . .	35·8	53·5	42·8	30·4	45·4	37·3
Wool	11·0	15·8	26·4	8·7	10·2	12·0
Silk	9·9	8·2	3·1	6·5	4·8	2·4
Flax, &c. . .	5·6	10·4	10·1	5·5	9·7	8·7
Grain	32·8	36·7	69·5	32·0	34·6	66·8
Meat	3·9	7·7	26·5	3·9	7·7	26·5
Butter, &c. . .	6·8	11·9	21·2	6·8	11·9	21·2
Sugar	12·8	17·6	23·0	12·4	17·1	22·4
Tea, &c. . . .	9·7	15·4	19·3	7·5	9·2	10·9
Wines	6·2	8·0	8·6	4·7	7·1	7·4
Timber . . .	10·7	13·2	16·8	10·7	13·2	16·8
Manufactures .	6·4	26·5	33·7	6·0	26·0	32·6
Sundries . . .	59·4	78·1	110·0	46·9	62·1	83·0
Total . .	211·0	303·0	411·0	182·0	259·0	348·0

D.—British Imports, Quantities Consumed.

	Millions.			Per Inhabitant.		
	1860.	1870.	1880.	1860.	1870.	1880.
Cotton, lbs. . .	1,141	1,101	1,404	39	35	40
Wool „ . .	118	171	226	4	6	7
Meat „ . .	36	134	840	1	5	24
Butter „ . .	97	130	258	3	4	8
Cheese „ . .	67	116	198	2	4	6
Coffee „ . .	35	31	32	1	1	1
Tea „ . .	78	118	160	3	4	5
Sugar „ . .	980	1,460	2,220	34	47	63
Rice „ . .	42	210	510	1	7	14
Tobacco „ . .	35	40	50	1·2	1·3	1·4
Eggs, No. . .	173	420	770	6	14	22
Wine, gallons .	7	15	16	0·2	0·5	0·5
Grain, bushels .	58	140	265	2	5	8

	Value (Millions £).			Ratio.		
	1860.	1870.	1880.	1860.	1870.	1880.
Food	67·3	87·6	155·2	37·0	33·8	44·6
Fibres	51·1	70·1	60·4	28·1	27·1	17·3
Manufactures .	6·0	26·0	32·6	3·3	10·0	9·3
Sundries . . .	57·6	75·3	99·8	31·6	29·1	28·8
Total . . .	182·0	259·0	348·0	100·0	100·0	100·0

Digitized by Google

E.—British Imports, Where From.

From	Gross Imports (Millions £).			Ratio.	
	1860.	1870.	1880.	1870.	1880.
France	18	38	43	12·5	10·5
Germany . . .	15	15	24	5·0	5·8
Russia	16	20	16	6·6	3·9
Italy	3	4	3	1·3	0·7
Spain & Portugal .	6	9	14	3·0	3·4
Holland	8	14	26	4·6	6·3
Belgium	4	11	11	3·6	2·7
Scandinavia . .	7	12	16	4·0	3·9
Europe . . .	77	123	153	40·6	37·2
United States . .	45	50	107	16·5	26·0
South America .	10	20	17	6·6	4·1
China and Japan .	9	10	12	3·3	2·9
Turkey and Egypt	16	21	13	7·0	3·1
British Colonies .	43	65	93	21·5	22·7
Various	11	14	16	4·5	4·0
Total . .	211	303	411	100·0	100·0

F.—Imports into France.

	Value in £ (Thousands Omitted), Annual Average.				
	1861–65.	1866–70.	1871–75.	1876–80.	1882.
Grain . . .	5,100	7,600	10,400	21,200	21,000
Wool . . .	8,200	8,800	12,600	12,700	12,800
Silk . . .	10,400	14,300	14,800	14,100	13,800
Timber . .	5,400	7,000	5,600	9,100	7,800
Raw cotton .	10,400	12,100	8,800	8,200	8,400
Cattle . . .	2,900	4,700	5,600	7,600	6,800
Wine	...	...	800	4,400	14,100
Coal . . .	4,400	5,200	6,900	6,300	7,200
Hides . . .	3,600	4,900	6,400	6,400	6,700
Sugar . . .	5,100	4,500	4,200	4,200	5,700
Sundries . .	42,600	53,100	65,700	78,200	94,700
Total . .	98,100	122,200	141,800	172,400	199,000

G.—Imports into Germany.

Value, Annual Average, 1876–80 (*Thousands Omitted*).

Grain . . .	£29,200	Yarns . . .	£7,600
Wool . . .	10,800	Silk . . .	5,500
Cotton . . .	9,700	Hides . . .	4,200
Coffee . . .	9,100	Sundries . . .	99,700
Total		£175,800	

Digitized by Google

H.—Imports into Italy.

	Value in £ (Thousands Omitted).			Pence, per Inhabitant.		
	1862.	1870.	1880.	1862.	1870.	1880.
Raw cotton . .	300	1,400	3,300	3	13	28
Grain	3,100	3,200	2,800	34	30	24
Coal	700	1,500	2,300	8	14	21
Silk, raw . . .	4,100	1,300	2,100	45	12	19
Wool	500	500	1,200	5	4	11
Sundries . . .	24,500	27,900	35,500	270	260	302
Total . .	33,200	35,800	47,200	365	333	405

I.—Imports into Spain.

	Value in £ (Thousands Omitted), Annual Average.				
	1861–65.	1866–70.	1871–75.	1876–80.	1880.
Raw cotton .	900	1,400	3,100	2,800	3,000
Dry goods .	2,700	2,200	2,100	2,600	2,500
Timber . .	400	400	800	1,000	1,100
Machinery .	300	200	300	700	1,000
Cod-fish . .	500	500	700	700	800
Coal . . .	300	400	700	800	900
Sundries . .	10,500	12,000	10,700	10,000	9,600
Total . .	15,600	17,100	18,400	18,600	18,900

K.—Imports into Belgium.

	Value in £ (Thousands Omitted).			Shillings per Inhab.		
	1860.	1870.	1880.	1860.	1870.	1880.
Grain . .	2,800	3,600	13,400	11	14	48
Wool . . .	2,100	3,500	7,400	9	14	27
Meat . . .	700	1,300	4,900	3	5	18
Flax . . .	700	2,600	4,000	3	11	15
Iron . . .	400	900	1,000	2	4	4
Timber . .	600	800	2,100	3	3	8
Raw cotton	800	1,400	1,700	3	6	6
Sundries . .	12,600	22,700	32,700	52	90	118
Total .	20,700	36,800	67,200	86	147	244

Digitized by Google

L.—Imports into Holland.

	Value in £ (Thousands Omitted).			Shillings per Inhab.		
	1861.	1870.	1880.	1861.	1870.	1880.
Grain . . .	3,100	3,300	8,400	19	18	42
Iron . . .	900	1,400	5,800	5	8	29
Coffee . .	2,700	3,600	3,600	16	20	18
Sugar . . .	2,500	3,600	2,800	15	20	14
Raw cotton .	1,600	1,800	2,300	10	10	12
Tallow . .	200	400	2,300	1	2	12
Rice . . .	1,200	1,000	1,900	7	6	9
Sundries . .	15,000	23,700	41,900	90	130	210
Total .	27,200	38,800	69,000	163	214	346

M.—Imports into Russia.

	Annual Average (Thousands Omitted).				
	1861–65.	1866–70.	1871–75.	1876–80.	1880.
Cotton, cwts. . .	390	820	1,280	1,560	1,610
Coal, tons . . .	610	740	1,060	1,640	1,990
Iron, ,, . . .	20	184	302	366	396
Tea, cwts. . . .	88	157	243	220	320
Coffee, cwts. . .	116	125	146	135	160
Rice, ,, . . .	80	98	160	151	310

N.—Imports into United States.

Year.	Value (in Gold) Millions Sterling.						Ratio per Inhab. Shillings.
	Dry Goods.	Hard-ware.	Sugar.	Tea and Coffee.	Sun-dries.	Total.	
1821 . . .	5	½	1	1	1½	9	18
1831 . . .	9	1½	1½	1½	3½	17	27
1841 . . .	10	1	2½	3	7½	24	28
1851 . . .	16	3	3½	3½	16	42	33
1861 . . .	18	4	6½	6	22½	57	35
1871 . . .	26	9	14	9	37	95	47
1881 . . .	26	11	18	16	59	130	50

IMPROVEMENTS.

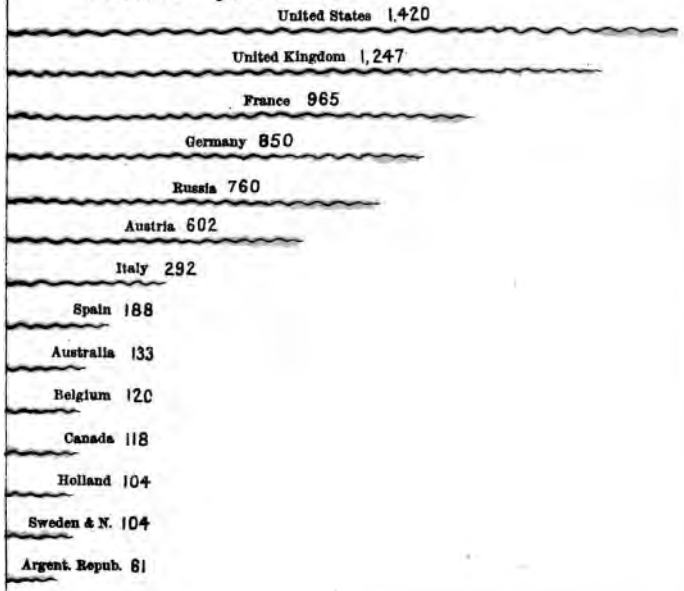
Rue Rivoli, Paris . . .	cost £2,860,000
Boulev., Sebastopol . . .	,, 1,390,000
New Cannon Street, London .	,, 590,000
Victoria Street, . . .	,, 330,000

Baron Haussman rebuilt a great portion of Paris in the years 1853 to 1869, at an outlay of 85 millions sterling.

Digitized by Google

INCOME OF NATIONS.

Annual earnings, in millions £



Average per inhabitant, £ per an.

Digitized by Google

Digitized by Google

INCOME.

A.—Gross Earnings of Nations.

	Millions Sterling.			Ratio per Inhabitant.
	Agriculture.	Other Industries.	Total.	
United Kingdom .	266	981	1,247	£35·2
France	444	521	965	25·7
Germany . . .	456	394	850	18·7
Russia	509	251	760	9·9
Austria	322	280	602	16·3
Italy	178	114	292	10·7
Spain	136	52	188	11·4
Portugal	31	14	45	11·1
Belgium	45	75	120	22·1
Holland	45	59	104	26·0
Denmark . . .	37	10	47	23·2
Sweden & Norway	71	33	104	16·2
Switzerland . . .	18	26	44	16·0
Greece	10	13	23	11·8
Europe . . .	2,568	2,823	5,391	18·0
United States . .	604	816	1,420	27·2
Canada	58	60	118	26·9
Australia . . .	76	57	133	43·4
The World . .	3,306	3,756	7,062	19·6

Agriculture includes not only tillage, but also pastoral farming and forestry. The table is not official.

B.—British Income at Various Dates.

Year.	Millions £.	Per Inhab.	Kingdom.
1664	42	£7·8	England and Wales.
1688	45	8·2	"
1770	122	16·3	"
1806	170	15·2	Great Britain.
1822	280	19·8	"
1840	540	20·6	United Kingdom.
1860	760	26·2	"
1882	1,247	35·2	"

C.—French Income at Various Dates.

Year.	Millions £.	Per Inhab.	Pop. (Millions).
1780	160	£6·1	26·3
1800	216	7·7	27·4
1820	315	10·4	30·3
1840	480	14·1	34·0
1868	806	21·6	37·5
1882	965	25·7	37·6

Digitized by Google

D.—Income of British People.

Class.	A.D. 1688.		A.D. 1800.		A.D. 1883.	
	Families, Number.	Earnings (Mill. £).	Families, Number.	Earnings (Mill. £).	Families, Number.	Earnings (Mill. £).
Gentry .	16,500	6	36,000	28	222,000	333
Middle .	114,000	12	181,000	57	604,000	241
Trades .	310,000	16	446,000	67	1,220,000	244
Working	759,500	11	1,117,000	78	4,629,000	447
Total .	1,200,000	45	1,780,000	230	6,675,000	1,265

E.—Earnings of British Nation in 1882.

	Millions £.	Per Inhab.	Ratio.
England . . .	1,048	£41	84·0
Scotland . . .	121	32	9·7
Ireland . . .	78	16	6·3
United Kingdom	1,247	36	100·0

INCOME-TAX.

A.

Years.	Average Rate (Pence).	Annual Product.	Product per Penny.	Product per Inhab.
1842–51	7·0	£5,467,000	£782,000	65 pence
1852–61	9·8	10,224,000	1,041,000	89 „
1862–71	5·5	7,764,000	1,408,000	62 „
1872–81	3·8	7,062,000	1,868,000	52 „
40 years	6·0	7,625,000	1,275,000	66 „
1881	6·0	10,650,000	1,775,000	73 „

B.—Assessments in United Kingdom.

	Millions £.			
	1850.	1860.	1870.	1880.
Houses . . .	47	61	77	112
Lands . . .	56	58	65	69
Professions, &c. .	171	216	303	397
Total . .	274	335	445	578

This includes an estimate of 18¼ millions for Ireland in 1850, the tax not being then extensive to that country.

C.—Aliquot Parts.

	1850.	1860.	1870.	1880.
Houses . .	17·1	18·3	17·3	19·3
Lands . .	20·4	17·4	14·6	11·9
Professions, &c. .	62·5	64·3	68·1	68·8
Total . .	100·0	100·0	100·0	100·0

Digitized by Google

D.—Distribution in Three Kingdoms.

	Millions £.			Per Inhabitant.		
	1860.	1870.	1880.	1860.	1870.	1880.
England . . .	282	379	486	£14	£17	£19
Scotland . . .	30	40	56	10	12	15
Ireland . . .	23	26	36	4	5	7
United Kingdom .	335	445	578	£11	14	17

E.—Returns for 1860 and 1880.

	Millions £.							
	England.		Scotland.		Ireland.		U. Kingdom.	
	1860.	1880.	1860.	1880.	1860.	1880.	1860.	1880.
Houses	52	98	6	11	3	3	61	112
Lands	43	51	6	8	9	10	58	69
Railways . . .	12	26	2	4	1	1	15	31
Professions . .	175	311	16	33	10	22	201	366
Total .	282	486	30	56	23	36	335	578

F.—Relative Increase since 1850.

	1850.	1860.	1870.	1880.
Houses . .	100	130	164	238
Lands . .	100	104	116	123
Railways . .	100	143	228	295
Professions . .	100	125	174	228
Total . . .	100	122	162	211

G.—Relative Value of the Three Kingdoms.

	1850.	1860.	1870.	1880.
England . .	85·0	84·1	85·2	84·2
Scotland . .	8·4	9·0	9·0	9·6
Ireland . .	6·6	6·9	5·8	6·2
United Kingdom	100·0	100·0	100·0	100·0

H.—Classification of Incomes in 1877.

Income.	England.	Scotland.	Ireland.	U. Kingdom.
Over £50,000 . .	71	15	4	90
£10,000 to £50,000	904	132	31	1,067
£1,000 to £10,000 .	18,622	2,191	878	21,691
£150 to £1,000 . .	275,733	27,642	14,473	317,848
Over £150 . . .	295,330	29,980	15,386	340,696

Digitized by Google

I.—Assessments of Income in Italy.

Cities.		Classes.	
Florence	£3,415,000	Over £200	8,120
Milan	2,420,000	£80 to £200	22,300
Rome	2,060,000	£40 to £80	49,600
Naples	1,240,000	£20 to £40	114,240
Turin	1,220,000	£12 to £20	135,300
Genoa	1,210,000	Under £12	311,400
Various	16,865,000		
Total	£28,430,000	Total	641,160

INDIARUBBER.—This is mostly obtained from the Seringueros of the Amazon, who sell it for sixpence a pound to the merchants of Para, but its value on reaching England or United States is over two shillings a pound. The quantities imported into Great Britain and United States have been as follows:—

Into	Tons Imported.		
	1860.	1870.	1880.
Great Britain	2,150	7,606	8,479
United States	1,610	4,316	7,529
Total	3,760	11,922	16,008
Value per ton	£224	£215	£277

The best rubber-forests in Brazil will ultimately be exhausted, owing to the reckless mode followed by the Seringueros or tappers. The ordinary product of a tapper's work is from 10 to 16 lbs. daily. There are 120 indiarubber manufacturers in the United States, employing 15,000 operatives, who produce 280,000 tons of goods, valued at 52 millions sterling, per annum.

INDIANS.

A.—Principal Tribes in United States.

Cherokees, Choctaws	47,800	Crow, Flathead	19,400
Esquimaux, &c.	62,400	Pawnee, Fox	18,100
Shoshones, Snakes	25,300	Apaches, Navajas	20,100
Dacotah, Sioux	28,100	Oregon, Arizona, &c.	111,000

Total.

East of Rocky Mountains	188,400
West of „ „	143,700
	332,100

Digitized by Google

B.—Indians Paying Taxes (United States).

State.	1870.	1880.	Increase.
California	7,241	16,277	9,036
New Mexico	1,309	9,772	8,463
Michigan	4,926	7,249	2,323
Washington Territory	1,319	4,405	3,086
Arizona	31	3,493	3,462
Wisconsin	1,206	3,161	1,955
Various	9,699	22,050	12,351
Total	25,731	66,407	40,676

C.—Industry, Schools, &c., of Indians.

	Civilised.	Half-Civilised.	Savage.	Total.
Population	104,800	144,300	83,000	332,100
Acres tilled	273,000	157,000	...	430,000
Grain, bushels	2,780,000	1,070,000	...	3,850,000
Hay, tons	177,000	48,000	...	225,000
Vegetables, tons	8,500	9,800	...	18,300
Churches	117	...	...	117
Schools	344		...	344
Pupils	13,350		...	13,350
Horses	301,000		...	301,000
Cows	311,000		...	311,000
Sheep	447,000		...	447,000
Pigs	214,000		...	214,000

The number of Indians who vote as American citizens is 24,600. The Indian race has diminished 60,000 since 1836.

D.—United States Indians in 1837.

East of Mississippi.		West of Mississippi.	
Cherokees	22,000	Blackfeet	30,000
Chippewas	6,500	Sioux	21,600
Seminoles	5,000	Creeks	20,437
Winnebagos	4,500	Apaches	20,280
Various	11,365	Camanches	19,200
Total	49,365	Choctaws	15,000
		Pawnees	12,500
		Eutaws	19,200
		Crows	7,200
		Various	117,710
		Total	283,127

E.—Indians in Canada.

Locality.	Population.	Property.	Average, per Head.
Ontario	16,000	£1,968,000	£123
Quebec	11,000	363,000	33
Manitoba, &c.	75,400	...	...
Total	102,400	...	...

INDUSTRIAL SCHOOLS.—See *Reformatories.*

Digitized by Google

INDUSTRIES.

	Value in Millions £.					Ratio per Inhab.
	Agriculture.	Manufacture.	Commerce.	Transport.	Total.	
U. Kingdom .	266	818	570	186	1,840	£52
France . . .	444	494	340	90	1,368	36
Germany . . .	456	449	315	110	1,330	30
Russia . . .	509	238	120	63	930	12
Austria . . .	322	210	128	44	704	19
Italy	178	117	96	18	409	15
Spain	136	96	41	14	287	18
Portugal . . .	31	20	13	3	67	16
Belgium . . .	45	92	116	11	264	48
Holland . . .	45	40	121	6	212	53
Denmark . . .	37	16	19	3	75	38
Swed. and Nor.	71	37	36	14	158	24
Europe . .	2,540	2,627	1,915	562	7,644	25
United States .	604	1,112	313	252	2,281	44
Canada . . .	58	52	46	11	167	38
Argent. Repub.	42	11	21	4	78	30
Australia . .	76	26	101	9	212	71
Total . .	3,320	3,828	2,396	838	10,382	29

In the above table *manufactures* includes *mining*. For numbers employed see *Occupations*. The table is not official.

INFANTS.

A.—Ratio of Population under 5 Years of Age.

	Per 100 Inhab.		Per 100 Inhab.		Per 100 Inhab.
England . .	13·5	Austria . .	13·2	Sweden . .	12·6
Scotland . .	13·0	Italy . . .	13·8	Norway . .	13·5
Ireland . . .	11·1	Spain . . .	14·2	Greece . .	14·4
U. Kingdom .	13·3	Holland . .	11·3	Brazil . .	10·8
France . . .	9·8	Belgium . .	12·1	U. States .	14·3
Germany . .	12·7	Denmark .	12·5	London . .	13·0

B.—Death-rate per 1000 under 5 Years: per Annum.

England . . .	64	Austria . .	112	Belgium . . .	68
United States .	59	Italy . . .	111	Sweden . . .	58
France . . .	76	Spain . . .	106	Medium . . .	82

Digitized by Google

C.—DEATH-RATE OF INFANTS UNDER 12 MONTHS.

	Per Cent.		Per Cent.		Per Cent.
England . . .	15	Russia . . .	27	Italy . . .	22
Scotland . . .	12	Austria . .	25	Belgium . .	15
Ireland . . .	11	Wurtemburg .	32	Holland . .	20
United States .	17	Saxony . . .	26	Denmark . .	14
France . . .	16	Bavaria . .	31	Sweden . .	14
Prussia . . .	21	Spain . . .	19	Norway . .	11

The highest death-rate of infants in the world is at Liverpool, where 46 of every 100 born die before reaching 12 months. The rate at New York is 31 per cent.

D.—INFANT DEATH-RATE IN FRANCE.

Dying under 12 *Months of* 100 *Born.*

Males	17	Legitimate .	15	Rural	15
Females . . .	15	Bastards . .	30	Urban	18
Total	16	Total . . .	16	Total	16

INQUESTS.—See *Coroners.*

INSANITY.

A.—INSANE OF ALL COUNTRIES.

	Number.	Per 1000 Inhab.	Ratio of Recovery.	Annual Death-rate.	Asylums.
			Per Cent.	Per Cent.	
England	81,600	3·2	39	10	81
Scotland	11,600	3·2	42	8	
Ireland	19,500	3·7	48	8	
France	93,900	2·5	33	15	110
Germany	108,100	2·4	31	8	130
Russia	80,000	1·1	...	...	74
Austria	35,000	1·0	...	...	28
Italy	44,100	1·6	...	...	33
Spain and Portugal	13,000	0·7	...	...	11
Belg. and Holland	10,400	1·2	32	14	68
Switzerland . . .	3,100	1·1	...	...	42
Scandinavia . . .	18,100	2·9	...	...	27
Europe . . .	518,400	1·6	33	12	604
United States . .	168,900	3·3	47	10	...
Canada	7,300	1·8	...	...	...
Australia . . .	4,900	1·7	45	7	...
Total	695,500	1·9	36	11	...

Digitized by Google

B.—Insane of United Kingdom.

	England.	Scotland.	Ireland.	United Kingdom.
Pauper insane . .	65,400	8,000	12,200	85,600
Private „ . .	16,200	3,600	7,300	27,100
Total	81,600	11,600	19,500	112,700
Lunatics	39,600	6,800	9,800	56,200
Idiots	29,500	4,600	6,700	40,800
Unclassified . . .	12,500	200	3,000	15,700
Total	81,600	11,600	19,500	112,700

C.—Increase of Insanity.

Years.	Paupers Insane (per Million Inhab.). England and Wales.	Scotland.
1861–65 . . .	2,080	2,050
1871–75 . . .	2,581	2,290
1880 . . .	2,792	2,580

D.—Insanity in United States.

Year.	Lunatics.	Idiots.	Total.	Per 1000 Inhab.	Sex Ratio (Percentage of Males). Lunatics.	Idiots.	Total.
1850	15,610	15,790	31,400	1·36	51	60	55
1860	24,040	18,930	42,970	1·39	49	58	53
1870	37,430	24,530	61,960	1·61	47	60	53
1880	91,990	76,890	168,880	3·30	46	60	51

E.—Ratio of Sex.

	Inmates of Asylums. Male.	Female.	Total.		Inmates of Asylums. Male.	Female.	Total.
England . .	47	53	100	France . .	48	52	100
Scotland . .	48	52	100	Italy . . .	56	44	100
Ireland . . .	52	48	100	United States	51	49	100

Even in countries where the number of insane females exceeds that of males, it is found that men are more liable than women to insanity, but die faster. Thus in France there are annually admitted 110 males to 100 females, though the existing number of the latter is greater.

Digitized by Google

F.—Causes of Insanity.

	Per Cent.		Per Cent.
Hereditary	24	Loss of friends	11
Drink	14	Sickness	10
Business	12	Various	29

The above result is the medium average arrived at on comparing the returns for England, France, Denmark, and United States.

G.—Insane according to Locality (Great Britain).

Pauper Insane per 100,000 *Inhabitants.*

Shetland	96	Edinburgh	172	Argyll	259
Orkney	107	Sheffield	179	Manchester	270
Bradford	121	Newcastle	191	Birmingham	301
Durham	129	Swansea	202	Oxford	312
Cornwall	158	Liverpool	219	Nottingham	342
Leeds	160	Perth	233	London	361

H.—Insanity in France.

Year.	Number.	Per 1000 Inhab.	Caused by Drink (per Cent.).
1836	27,000	0·80	7
1846	42,400	1·20	8
1856	59,800	1·66	9½
1866	90,100	2·38	14
1869	94,800	2·47	15
1879	93,970	2·52	15

I.—Insanity in Prussia.

Year.	Male.	Female.	Total.	Per 1000 Inhab.	Ratio of males (per Cent.).
1871	28,002	27,041	55,043	2·21	51
1880	34,309	32,036	66,345	2·43	51

INSURANCE.

A.—Life Insurance of Nations.

	Policies (Thousands).		Amount (Millions £).		Average Policy (£).		Insurance to Pop. (£).	
	1870.	1880.	1870.	1880.	1870.	1880.	1870.	1880.
G. Britain	688	879	338	422	505	460	10·5	12·1
France	129	208	51	87	395	418	1·4	2·4
Germany	456	797	64	127	142	159	1·7	2·9
Austria	90	170	20	40	220	230	0·7	1·2
U. States	748	725	405	312	540	430	10·2	6·1
Canada	40	48	14	17	350	348	3·8	4·0
Total	2,151	2,827	892	1,005	414	355	6·0	5·0

Digitized by Google

B.—Business Done in 1880.

	Great Britain.	France.	Germany.	United States.
Premium (millions £) . . .	13·2	2·8	3·4	12·7
Rate of premium	3·15	3·16	2·70	4·00
Policies paid (millions £) .	11·2	1·2	1·9	...
Average number paid . . .	2·7	1·3	1·5	...
New policies (millions £) .	20·9	17·7	13·8	37·5
Number issued during 1880.	44,900	47,800	47,600	123,000

British life companies show assets 130 millions, and total revenue 19½ millions sterling: American companies 84 millions sterling for assets, and 17 millions for revenue.

C.—Life Insurance in France.

Years.	Annual Average.			
	New Policies.	Millions £.	Per Policy.	Insurers, per Million Inhabitants.
1861–70 . .	12,870	5·1	£396	368
1871–75 . .	14,900	7·6	511	430
1876–79 . .	32,025	12·2	384	890
1880 . . .	47,800	17·7	372	1,320

D.—Life Insurance in Germany.

	1850.	1860.	1870.	1880.
Number of policies .	40,900	129,600	456,200	797,100
Amount, millions £ . .	7·4	21·2	64·0	127·3
Policies paid . .	£150,000	£350,000	£1,020,000	£1,870,000
Ratio to insurance .	2·0	1·7	1·6	1·5

E.—Fire Insurance of Nations.

	Amount Insured.		Ratio of Insurance.	Annual Fires.	
	Millions £.	Per Inhab.		Millions.	Per Inhab. Shillings.
United Kingdom .	2,738	£78	0·25	9·2	5
France	4,056	112	0·10	3·1	2
Germany	3,170	68	0·20	6·4	3
Russia	180	2	0·50	12·0	3
Belgium	400	72	0·10	0·5	2
Scandinavia . . .	115	14	0·27	1·0	3
United States . .	1,290	26	0·90	23·0	9
Canada	140	32	1·10	3·0	15
Total	12,089	£47	0·27	58·2	5

Digitized by Google

F.—Fire Insurance of United Kingdom.

Year.	Amount (Millions £).				Per Inhab.
	England.	Scotland.	Ireland.	United Kingdom.	
1801 . . .	220	4	9	233	£15
1810 . . .	325	12	17	354	20
1830 . . .	482	34	19	535	22
1850 . . .	680	43	34	757	28
1868 . . .	921	99	52	1,072	36
1882 . . .	2,355	274	109	2,738	78

The assets of fire companies in 1881 amounted to 24 millions sterling. The figures for amount insured in 1882 are estimates, the last official returns being for 1868.

G.—Fire Insurance in France.

Year.	Amount Insured.		Premium (Thousands £).	Losses Paid (Thousands £).
	Millions £.	Per Inhab.		
1851 . .	1,318	£41	1,140	560
1856 . .	1,810	54	1,566	774
1868 . .	3,092	88	2,440	1,460
1875 . .	3,190	90	3,030	2,390
1881 . .	4,056	112	3,855	2,430

H.—Fire Insurance in Germany.

Year.	Amount Insured.		Premium (Thousands £).	Losses Paid (Thousands £).
	Millions £.	Per Inhab.		
1850 . .	815	£27	1,650	1,200
1860 . .	1,450	40	3,000	2,000
1870 . .	2,030	50	4,160	2,900
1880 . .	3,125	67	6,370	4,400

I.—Fire Insurance in United States.

Year.	Amount Insured.		Premium (Thousands £).	Losses Paid (Thousands £).
	Millions £.	Per Inhab.		
1856 . .	175	£7	1,440	880
1862 . .	365	11	3,100	1,900
1876 . .	1,310	30	11,800	8,800
1881 . .	1,290	26	11,630	8,950

Digitized by Google

K.—Marine Insurance.

	Amount (Millions £).	Average Premium per Voyage.
Lloyd's	480	1·2
Hamburg	105	1·2
French maritime	102	1·5
Various	200	...
Total	887	...

The loss of sailing vessels averages 4 per cent.; that of steamers, 2½ per cent. per annum.

L.—Hamburg Marine Insurance Company.

Year.	Amount (Millions £).	Premium per Voyage (Shillings per £100).
1820	11	34
1840	20	30
1860	47	27
1870	65	24
1878	105	23

INVESTMENTS OF BRITISH CAPITAL.

	Millions Sterling.		Rate of Interest.
	Capital.	Interest.	
National Debt	769	23·1	3·0
Railways	770	33·2	4·3
Banks	270	16·6	6·5
Mines and iron	215	11·8	5·5
Canals and docks	94	3·7	4·0
Gas and water	72	5·7	8·0
Telegraphs	30	1·7	5·7
Insurance	20	1·2	6·0
Shipping, &c.	193	9·7	5·0
British	2,433	106·7	4·4
Colonial loans	148	7·4	5·0
Indian do.	154	6·2	4·0
Indian and colonial railways	186	9·3	5·4
Foreign loans and railways	570	25·7	4·5
Total	3,491	155·3	4·4

In the above table are not included loans on which no interest is received, such as Peruvian, &c. Neither are counted sums on mortgage lent by British capitalists on properties in Australia, Brazil, and other countries. New companies in England absorb about 60 millions per annum. See *Joint-stock.*

Digitized by Google

IRON.

A.—Increase of Production since 1830.

	Thousands of Tons.				
	1830.	1850.	1870.	1871-80.	1882.
Great Britain . .	682	2,250	5,230	6,620	8,488
United States .	165	560	1,580	2,440	4,023
Germany . . .	120	402	1,310	2,020	3,171
France	105	408	1,230	1,410	2,033
Belgium . . .	96	170	260	580	640
Austria	80	140	280	440	550
Russia	115	220	360	390	505
Sweden	105	130	300	330	410
Total . . .	1,468	4,280	10,550	14,230	19,820

B.—Production Compared with Population.

	Pounds of Pig Iron per Inhabitant.			
	1830.	1850.	1870.	1882.
Great Britain . .	66	190	420	555
United States .	28	54	90	196
Germany . .	9	26	82	140
France . . .	7	25	83	117
Belgium . . .	60	85	115	250
Austria . . .	7	11	17	30
Russia . . .	5	8	11	12
Sweden . . .	80	84	165	190

C.—Consumption of Pig Iron.

	Thousands of Tons.		Lbs. per Inhabitant.	
	1850.	1881.	1850.	1881.
Great Britain .	1,970	6,415	170	420
United States .	560	5,372	55	240
Germany . .	420	2,520	27	126
France . .	450	2,110	27	122
Belgium . .	170	720	85	303
Austria . .	150	520	12	30
Russia . .	300	630	10	18
Sweden . .	45	180	30	90
Total . .	4,065	18,467	42	68

D.—Uses of British Iron (1881).

	Tons.
Pig iron exported	1,480,000
Made into steel	1,950,000
For various manufactures	4,896,000
Total	8,326,000

Digitized by Google

E.—Value of Iron Manufactured.

Bar of pig iron	£1	Made into penknives	£650
Made into horse-shoes	2	„ buttons	6,100
„ needles	11	„ watch-springs	51,200

Visiting cards are now sometimes made of very thin sheet iron, viz. :—

	Per Inch Thick.		Per Inch Thick.
Belgian	400	Baron Krupp's	820
Count Harrach's	640	Count Renard's	1,000

F.—Production in the Three Kingdoms (1881).

	Tons (Thousands).	Lbs. Pig Iron per Inhabitant.
England	6,147	555
Wales	917	1,466
Scotland	1,206	712
Ireland	56	23
United Kingdom	8,326	530

G.—Prices of Pig Iron for Ten Years (1870–80).

	Shillings per Ton.		
	Great Britain.	Continent.	United States.
Highest	117	140	161
Lowest	48	72	70
Average	68	88	116

H.—Yield of Ironstone.

Percentage of Iron.

France	31	United States	43	Canada	60
Germany	36	Australia	55	Russia	44
England	41	Algeria	58	Sweden	52

I.—Coal Used in Making Pig Iron (Great Britain).

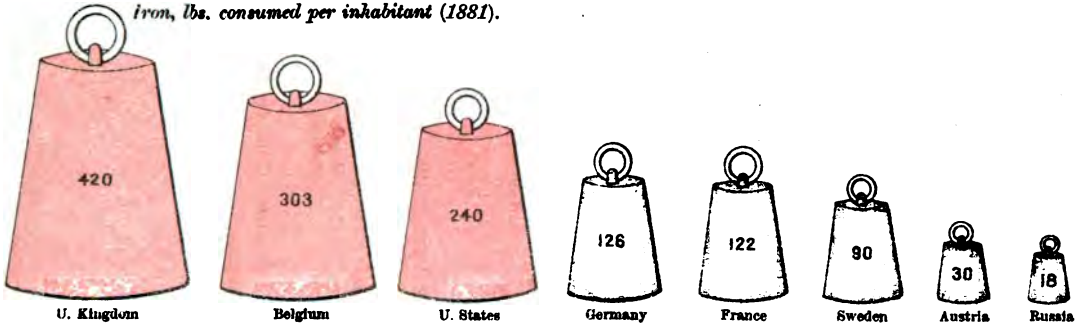
	Thousands of Tons.		
Year.	Iron.	Coal.	Tons of Coal to 1 Ton of Iron.
1796	125	750	6·0
1806	243	1,220	5·0
1840	1,396	4,877	3·5
1870	5,230	16,220	3·1
1875	6,365	15,700	2·5
1881	8,326	18,300	2·2

Neilson's invention in 1829 of the hot-blast, 600° Fahrenheit, caused a saving of 33 per cent. in the quantity of coal

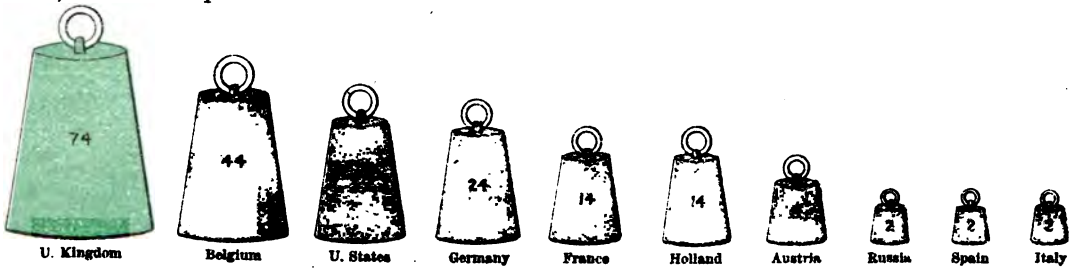
Digitized by Google

IRON AND COAL CONSUMPTION.

Iron, lbs. consumed per inhabitant (1881).



Coal, cwts. consumed per inhabitant.



Digitized by Google

Digitized by Google

required. Cowper's regenerator of 1500° Fahrenheit, introduced in 1857, caused a further saving. Charcoal is sometimes used, the average requisite to produce a ton of iron being 15 cwt. in Styria, 16 in Sweden, and 23 in United States. The ironworks of the United States consume 680,000 tons of charcoal, equal to 50,000 acres of timber, per annum.

K.—Coal and Pig Iron in 1881.

	Tons (Thousands Omitted).			
	Pig Iron.	Coal Raised.	Used for Iron.	Percentage of Coal used for Pig Iron.
Great Britain	8,326	154,300	18,300	12
United States	4,160	70,000	9,100	13
Germany	2,790	59,000	6,200	11
France	1,880	19,000	4,200	22
Belgium	610	17,000	1,300	8
Austria	520	16,000	1,100	7
Russia	430	3,600	1,000	28
Other countries	584	9,100	1,300	14
Total	19,300	348,000	42,500	12

L.—Total Coal used in Ironworks (Great Britain).

	Tons.
For pig iron	18,300,000
„ finished iron	8,043,000
„ Bessemer steel	906,000
„ other steel	776,000
„ tin plates	577,000
„ boilers, engines, &c	1,000,000
„ shipbuilding	506,000
„ sundries	4,655,000
Total (1881)	34,763,000

M.—Cost of Producing Iron (1883).

	Shillings per Ton.		
	Pig Iron.	Wrought Iron.	Steel.
England	50	122	160
France	73	182	224
Germany	59	144	192
Belgium	47	130	131

The above is from a report of French Government to Legislature.

Digitized by Google

N.—Consumers of British Iron.

	Tons.		Lbs. per Inhabitant.	
	1872.	1882.	1872.	1882.
United States .	970,000	1,193,000	55	51
Germany . . .	812,000	681,000	44	35
Canada	165,000	247,000	110	122
Australia . . .	95,000	301,000	113	228
Russia	138,000	164,000	4	5
France	108,000	205,000	6	11
Belgium . . .	163,000	86,000	72	41
Italy	20,000	118,000	2	9
Spain	24,000	32,000	3	4
Brazil	21,000	67,000	4	12
Various . . .	867,000	1,256,000	...	...
Total	3,383,000	4,350,000	...	...

IRONCLADS. See *Navy*.

IRRIGATION.

France.—Only 260,000 acres irrigated, which yield crops worth £3 per acre more than ordinary.

Italy.—The canals in the Po valley irrigate 1,370,000 acres, which receive every day in summer 45 million tons of water, measured through a great number of little sluice-gates: the permanent right to an inch of water is worth from £500 to £800. The usual rent of these lands is £6 per acre per annum.

Belgium.—Since 1859 an area of 160,000 acres of waste lands has been made valuable by irrigation, adjoining state-canals.

Spain.—Land unwatered may be rented at 5 shillings an acre, but the irrigated lands of Valencia, where the old canals and works of the Moors remain, readily rent at £5 per acre. The total area of irrigated lands is 2½ million acres.

Algeria.—The most important work is the "barrage" at Habra, with a basin holding 30 million tons of water, the main wall being 110 feet high and 1500 feet long. The distributory canals are 310 miles, irrigating a large extent of country.

Egypt.—During his reign of 17 years, from 1863 to 1879, Ismael Pacha constructed 112 canals branching from the Nile, to irrigate 1,400,000 acres, with an aggregate length

Digitized by Google

of 8,400 miles, the cost amounting to about 12 millions sterling. The lands thus newly irrigated produce crops worth £10,600,000, or 22 per cent. of the total value of Egyptian crops. The actual length of Nile canals is 52,000 miles, the task of irrigation employing 476 steam-pumps, 107,000 Persian water-wheels, 150,000 men, and 60,000 animals, at an annual cost averaging 4 shillings per acre.

India.—The Ganges canal irrigates 400,000 acres, is 880 miles long, having 902 bridges and 297 aqueducts, and cost £2,400,000. In the Madras Presidency irrigation is also carefully studied: there are 53,000 tank-reservoirs, 30,000 miles of dykes, the whole having cost 16 millions sterling, and producing a revenue of £1,500,000 per annum.

Cyprus.—The canals made by the Venetians had fallen to ruin under the Turks, but many of them have been restored by British engineer officers since 1878. Irrigated lands yield three times heavier crops than the rest of the island.

California.—Since 1870 have been constructed 2000 miles of canals, irrigating more than 10 millions of acres.

South America.—The Incas had a perfect network of canals irrigating the lands on the western slope of the Andes. Near Mendoza, at the Eastern foot of the Andes, still exists the Zanjon or canal made by the Cacique Guaymallen, irrigating a tract of 18 miles of country.

IVORY.—An ordinary elephant produces 120 lbs., worth £60. England consumes 650 tons (of which Sheffield one-third), for which it is necessary to kill 12,000 elephants yearly. At the Exhibition of 1851 there was a tusk of 162 lbs., but Gordon Cumming since got one of 173 lbs.

J

JESUITS.

A.—Numbers in 1865.

Europe	6,689	America	475
Asia	296	Australia	55
Africa	213	Total	7,728

B.—Numbers in 1882.

Italy	1,558	Spain and South America	1,933
Germany	2,875	G. Britain and U. States	1,894
France and Colonies	2,789	Total	11,049

Digitized by Google

JEWS.

A.—Numbers and Increase.

	Thousands.		
	1860.	1880.	Increase.
Russia	2,025	2,621	596
Austria	1,048	1,375	327
Germany	393	512	119
France	88	49	...
Holland	63	78	15
Great Britain	45	51	6
Italy	23	35	12
Turkey, &c.	260	280	20
Europe	3,945	5,001	1,056
Morocco	340	350	10
Tripoli	160	170	10
Algeria	82	133	51
Egypt	7	8	1
America	85	110	25
Asia	200	200	...
Total	4,819	5,972	1,153

B.—Vital Statistics (Jewish and European).

Births.	Jews (Per Cent.)	Europeans (Per Cent.)
Excess of male births	16	5
Illegitimate births	2	6
Still-births	2½	4½

Age.	Marrying Age.			
	Jews.		Europeans.	
	Males.	Females.	Males.	Females.
Under 20	2·2	23·5	1·8	12·1
20 to 30	66·4	58·5	62·6	65·6
30 to 40	17·4	9·8	25·3	16·2
40 to 50	7·4	5·4	6·2	4·6
Over 50	6·6	2·8	4·1	1·5
Total	100·0	100·0	100·0	100·0

Age at Death.	Ratio of Deaths.	
	Jews.	European.
Under 12 months	36·1	28·5
1 to 5 years	17·6	14·3
5 to 15 ,,	6·5	6·7
Over 15 ,,	39·8	50·5
	100·0	100·0

Digitized by Google

C.—Deaths of Jews according to Sex and Age.

Age.	Jews. Male.	Jews. Female.	Christians (Both Sexes).
Under 1	38·4	33·7	29·3
1 to 5	18·5	16·7	19·2
5 to 10	4·7	4·3	4·9
10 to 20	4·3	4·5	4·6
20 to 40	8·5	12·5	11·3
40 to 60	12·0	13·3	12·9
Over 60	13·6	15·0	17·8
	100·0	100·0	100·0

D.—Life-Value Compared with Christians.

Survival of 1000 *Persons Born.*

Age.	Jews (Prussia).	Christians. Prussia.	Christians. England.	Age.	Jews (Prussia).	Christians. Prussia.	Christians. England.
5	593	639	751	40	364	506	587
10	535	620	727	50	305	438	506
15	514	610	714	60	237	345	398
20	482	602	699	70	153	206	253
30	432	562	650	80	62	80	108

JOINT-STOCK COMPANIES, GREAT BRITAIN.

Period.	New Companies.	Millions £. Capital.	Millions £. Annual Average.	Capital per Company.
1862–65	2,986	639	160	£213,000
1866–70	2,722	324	65	115,000
1871–75	5,584	548	110	98,000
1876–81	5,688	469	78	82,000
20 years	17,030	1,980	99	£116,500

See *Investments.*

JUSTICES OF PEACE.—In England and Wales there are 9660, of whom 7770 are for counties, the rest for towns.

JUTE.

A.—Exports from India.

Year.	Tons.	Value.
1850	19,500	£89,000
1860	38,000	290,000
1870	120,000	1,520,000
1880	305,000	4,880,000

Jute is manufactured in India at 22 mills, with 6500 power-looms, which turn out 100 million sacks yearly, California taking 20 millions.

Digitized by Google

B.—CONSUMPTION IN GREAT BRITAIN.

Year.	Million Lbs.			Lbs. per Inhab.	Value of Manufacture (Thousands).
	Imported.	Exported.	Consumed.		
1850	42	...	42	1½	£860
1860	90	4	86	3	1,930
1865	234	47	187	6	4,150
1871	388	64	324	10	9,470
1875	383	117	266	8	5,330
1881	553	146	407	11	8,610

C.—EXPORTS OF JUTE MANUFACTURE FROM GREAT BRITAIN.

Year.	Million Yards.	Value (Thousands).	Per Yard, Pence.	Yarn, Million Lbs.	Total Export Value (Thousands).
1865	15	£312	4·8	5	£394
1870	52	790	3·6	13	987
1875	101	1,405	3·3	16	1,631
1880	183	2,255	3·0	17	2,488
1881	204	2,363	2·8	18	2,608

K

KINGS.—In 1883 there are 22 kings, including emperors. The number who have ruled in various countries since the battle of Hastings, A.D. 1066, has been as follows:—

	No.	Average Reign, Years.		No.	Average Reign, Years.
England . .	35	23	Spain . .	32	26
France . . .	34	24	Denmark . .	39	21
Germany . .	39	21	Sweden . .	53	15
Russia . . .	50	16	Turkey . .	35	17

The Turkish dynasty dates only from 1299. The average reign of the above 317 monarchs was just 20 years.

KOUMISS.—Spirit extracted by the Kalmucs from mares' milk: 2 gallons of milk give 18 ounces of koumiss wine, or 6 ounces of koumiss brandy.

KRUPP FACTORY.—Situate at Essen, near Cologne; is one of the greatest in the world.

Operatives . .	15,000	Iron consumed .	26,000 tons.
Steam, horse-power .	18,500	Steel ,, .	130,000 ,,

About 500 tons of steel or iron are daily converted into artillery or railway bars. There are 82 steam hammers, the heaviest weighing 50 tons.

Digitized by Google

L

LABOURER.—Dr. Farr estimates the value of an agricultural labourer to the commonwealth as follows:—

Age.	Value.	Age.	Value.	Age.	Value.
5	£56	30	£241	55	£138
10	117	35	228	60	97
15	192	40	212	65	46
20	234	45	193	70	0
25	246	50	168		

At the age of 75 he is a loss of £25, and the loss rises to £41 at 80. This is only true of agricultural labourers, since intellectual workers are often of much value after 70 years of age, which balances the account.

LACE.—This industry employs in Great Britain 9000 men and 41,000 women, who produce lace annually to the value of 6 millions sterling. It is stated that more than 500,000 women on the Continent make lace, worth 30 millions yearly, or £60 each, but this seems a high average.

LAKES.

	Square Miles.	Depth, Feet.	Area equal to
Superior	32,100	688	Ireland.
Aral	23,300	731*	Holland.
Huron	20,400	600	Greece.
Baikal	14,800	580	Denmark.
Michigan	12,900	690	Belgium.
Erie	9,600	84	Sardinia Island.
Ontario	7,650	510	...
Ladoga	6,250	...	Wurtemburg.
Onega	3,350	...	Corsica.
Wenner	2,130	294*	Devonshire.
Wetter	733	410	Oxfordshire.
Constance	180	1,027*	Isle of Man.
Neagh	153	42	Malta.
Maggiore	130	700	...
Zurich	40	600	St. Helena.

* Maximum depth. The rest show the average depth.

Digitized by Google

LAND.

A.—Cultivation and Value.

	Acres (Millions).			Value.			Rent, Acre, in Shillings.
	Cultivated.	Uncultivated.	Total.	Millions £.	Per Inhabitant.	Per cultivated Acre.	
U. Kingdom .	47	23	70	1,737	£48	£33	20
France . . .	67	49	116	2,624	70	36	24
Germany . .	68	57	125	2,060	45	25	18
Russia . . .	195	894	1,089	1,386	18	3	2
Austria . . .	57	85	142	1,290	36	15	8
Italy . . .	27	41	68	810	28	22	11
Spain . . .	22	90	112	660	40	18	5
Portugal . .	4	17	21	158	36	25	8
Belgium . .	5	1	6	245	46	48	30
Holland . .	5	2	7	212	53	42	30
Denmark . .	6	2	8	210	110	33	24
Sweden . . .	12	86	98	312	66	12	5
Norway . .	3	70	73	110	60	11	4
Greece . . .	2	9	11	105	57	18	12
Europe . .	520	1,426	1,946	11,919	40	20	8
United States	170	1,635	1,805	1,923	37	7	...
Canada . . .	16	1,902	1,918	180	42	8	...
Australia . .	11	1,847	1,858	182	64	7	...
Argent. Repub.	4	773	777	122	45	4	...
Total . . .	721	7,583	8,304	14,326	39	17	...

The above values do not include public lands in the United States, Canada, Australia, or the Argentine Republic.

B.—Land-owners of United Kingdom.

Class.	No.	Acres.	Average Acres.
1st . . .	34	6,211,000	183,000
2nd . . .	841	3,156,000	3,760
3rd . . .	179,649	60,912,000	330
Total .	180,524	70,279,000	390

	Owners.	Acres.	Average per Owner. Acres.	Average per Owner. Rental.	Rent per Acre.
England . .	154,774	33,110,000	212	£334	£1 11 4
Scotland . .	8,240	17,780,000	2,150	940	0 8 6
Ireland . . .	17,510	19,389,000	1,120	565	0 10 3
U. Kingdom	180,524	70,279,000	390	£387	£0 19 9

Digitized by Google

C.—Owners of Land.

	Number of Owners (Thousands).	Average Estate. Acres.	Average Estate. Value.	Land-owners to Population. per Cent.
United Kingdom	180	390	£9,600	0·5
France	3,226	32	810	9
Germany	2,436	37	850	5
Russia	11,336	75	120	14
Austria	3,432	41	370	9
Italy	1,865	35	430	7
Spain	680	150	970	4
Portugal	252	80	630	6
Belgium	335	18	735	6
Holland	154	45	1,370	4
Denmark	71	115	2,960	4
Sweden	204	400	1,550	5
Norway	110	300	1,000	6
Greece	163	66	640	9
Europe	24,444	80	£490	8
United States	4,005	160	450	8
Canada	408	120	250	9
Australia	168	380	1,090	6
Argentine Republic	390	850	310	13
Total	29,415	96	£503	8

The above table does not include cottiers or persons owning less than 5 acres.

D.—Land Tenure in United Kingdom, Cultivated Area.

Acres.	Number of Holdings (Thousands). England.	Wales.	Scotland.	Ireland.	U. Kingdom.
Under 50	295	41	55	435	826
50 to 100	45	10	10	56	121
Over 100	75	9	15	32	131
Total	415	60	80	523	1,078

Distribution of Area.

Area.	Acres (Thousands Omitted). England.	Wales.	Scotland.	Ireland.	U. Kingdom.	Ratio.
Under 50	3,500	600	700	7,800	12,600	26·5
50 to 100	3,200	700	700	4,400	9,000	18·8
Over 100	18,200	1,400	3,400	3,100	26,100	54·7
Total	24,900	2,700	4,800	15,300	47,700	100·0

Digitized by Google

E.—Land Rental of United Kingdom.

Year.	Thousands £. England.	Scotland.	Ireland.	U. Kingdom.	Rental per Acre, Shillings.
1750 . .	12,700	800	3,100	16,600	5
1780 . .	16,900	1,200	5,300	23,400	7
1814 . .	37,063	4,850	7,100	49,013	14
1843 . .	42,127	5,587	8,200	55,914	16
1850 . .	42,834	5,586	8,400	56,820	16
1860 . .	42,994	6,282	8,991	58,267	17
1868 . .	47,766	7,186	9,211	64,163	18
1877 . .	51,811	7,690	9,938	69,439	20

The official rental valuation of land in England in 1810 for various counties showed thus :—

	Shillings per Acre.		Shillings per Acre.		Shillings per Acre.
Leicester . . .	28	Stafford . .	21	Devonshire .	16
Somerset . . .	27	Kent . . .	20	Cornwall . .	15
Worcester . .	24	Bedford . .	19	Monmouth .	14
Warwick . . .	23	Lincoln . .	18	Durham . .	9
Lancashire . .	22	Surrey . . .	17	Cardigan . .	6

F.—Value of Land in England.

Year.	Per Acre. Price.	Rent.	Year.	Per Acre. Price.	Rent.
1230 . . .	£1 3 0	2s.	1750	£15	10s.
1440 . . .	1 16 0	3s.	1774	18	15s.
1570 . . .	3 0 0	4s.	1810	35	25s.
1660 . . .	4 10 0	6s.	1875	42	30s.

G.—Value of Land in France, per Acre.

	1852. 1st Class.	2nd Class.	1875. 1st Class.	2nd Class.
Vineyards . .	£40	£24	£56	£36
Meadow . . .	52	36	66	48
Tillage . . .	36	20	48	28

The official valuation of lands in France (which appears high) gave the following summary in 1881 :—

Quality.	Acres (Thousands Omitted).	Value per Acre.	Value, Millions £.
Orchards . .	1,783	£81	144
Vineyards . .	5,445	44	239
Meadows . .	6,170	55	340
Arable . .	41,319	36	1,488
Pasture, &c. .	23,010	18	414
Forest . .	21,288	12	256
Waste . . .	17,516	6	105
Total .	116,531	£26	2,986

Digitized by Google

H.—Land Value in 17th Century (A.D. 1660).

	Million £.		Per Acre.	
	Value.	Rental.	Value.	Rental.
England . .	135	8½	£4 10 0	£0 6 0
France . .	122	15	1 4 0	0 3 0
Holland . .	46	4	9 0 0	0 15 0

The above does not include houses (see Colbert's Letter to Louis XIV.)

I.—Land Tenure in United States.

Acres.	No. of Farms (Thousands).			Ratio.		
	1860.	1870.	1880.	1860.	1870.	1880.
Under 20 . .	216	467	890	11·1	17·6	9·8
20 to 50 . . .	617	848	781	31·6	32·0	19·5
50 to 100 . .	609	754	1,033	31·2	28·4	25·7
100 to 500 . .	487	565	1,696	24·8	21·3	42·4
Over 500 . . .	25	20	105	1·3	0·7	2·6
Total .	1,954	2,654	4,005	100·0	100·0	100·0

K.—Land Tenure in Australia.

	Land-Owners.	Squatters.	Millions of Acres.		Average Farm (Acres).	
			Free-hold.	Sheep-Runs.	Free-hold.	Squatter.
New S. Wales .	39,900	4,330	25·5	133·2	634	30,700
Victoria . . .	49,600	612	14·8	14·3	321	23,300
New Zealand .	24,100	997	4·1	12·1	167	12,050
South Australia .	31,000	1,472	9·2	115·0	296	78,000
Queensland . .	9,500	6,600	4·6	239·0	478	36,000
Tasmania . . .	12,000	500	4·2	1·8	353	3,500
West Australia .	1,800	4,500	1·7	24·0	950	5,300
Total .	167,900	19,011	64·1	539·4	384	28,300

L.—Land-owners in France.

Class.	Number.	Average Acres.	Area (Million Acres).
1st . .	154,000	320	48
2d . .	636,000	50	32
3d . .	2,436,000	10	23
Total .	3,226,000	32	103

Digitized by Google

LAND-OWNERS IN FRANCE—*continued.*

Tax.	Number of Properties. 1842.	1858.	1881.
Over £40 . .	16,310	15,870	14,774
£4 to £40 . .	480,000	466,000	600,000
Under £4 . .	5,597,630	5,590,150	6,328,200
Total .	6,093,940	6,072,020	6,942,974

M.—LAND-OWNERS IN GERMANY.

	Number.	Average Acres.	Area (Million Acres.)
Prussia . .	1,033,000	48	49
Bavaria . .	456,000	25	11
Saxony . .	54,000	50	2½
Wurtemburg .	152,000	17	2½
Baden . . .	111,000	15	2
Darmstadt . .	140,000	10	1½
Coburg . .	15,000	33	½
Small States .	475,000	40	19
Total .	2,436,000	37	88

N.—LAND-OWNERS IN RUSSIA.

Class.	Number.	Millions of Acres. Arable.	Forest, &c.	Total.	Average Estate (Acres).
Nobles . . .	103,000	60	132	192	2,000
Cossacks . .	142,000	10	8	18	130
Civilians . .	240,000	6	32	38	160
Peasants . .	10,851,000	164	438	602	55
Total .	11,336,000	240	610	850	75

O.—LAND-OWNERS IN ITALY.

	Estates.	Average Acres.	Area (Million Acres).
Lombardy and Piedmont	1,180,000	16	19
Tuscany and Romagna .	145,000	110	16
Naples	120,000	180	21
Sicily, &c. . . .	410,000	40	16
Total . . .	1,865,000	39	72

Almost one-half of Italy is farmed by the owners of the soil, as shown by the tenure, viz. :—

1,140,000 proprietors farm 33,000,000 acres.
1,248,000 metayers „ 18,000,000 „
310,000 tenants „ 20,000,000 „

The "metayer" system is adverse to improvement.

Digitized by Google

P.—Land-owners in Austria.

	Estates.	Average Acres.	Area (Million Acres).
Austria	189,000	42	8
Bohemia	199,000	65	13
Galitzia	496,000	40	20
Styria	134,000	40	5½
Moravia	98,000	56	5½
Tyrol	113,000	63	7
Carinthia, &c.	277,000	54	15
Austria	1,506,000	50	74
Hungary	1,925,000	35	68
Total	3,431,000	41	142
Nobles	11,800	5,200	62
Peasants	3,420,000	23	80
Total	3,431,800	41	142

Q.—Land Tenure in Belgium.

Class.	Average Acres.	Holdings.	Area (Acres).
Small tenants	10	63,000	640,000
Small freeholds	8	270,000	2,200,000
Middle size ditto	40	61,700	2,500,000
Large estates	160	4,000	650,000
Total	15	398,700	5,990,000

R.—Land Tenure in Denmark.

Holders.	Number.	Average Acres.	Area (Acres).
Nobles	550	2,500	1,380,000
Farmers	1,180	300	360,000
Boridsmen	69,100	60	4,200,000
Huusmen	137,000	4	560,000
Total	207,830	31	6,500,000

S.—Land Tenure in Sweden.

	Number.	Average Acres.	Area (Million Acres).
Nobles	2,650	14,000	38
Freeholders	191,000	200	38
Tenants	40,000	400	16
Total	233,650	396	92

Digitized by Google

LAND-ACTS (IRELAND).

1st in 1850. Encumbered Estates. In 30 years ending December 1880 the Land Court sold 3,600,000 acres for £52,700,000, nearly £15 per acre.

2nd in 1870. During 10 years down to 1880 the tenants bought 49,300 acres for £838,000, say £17 per acre.

3rd in 1881. The working during the first 12 months to August 1882, was as follows:—

Cases adjudicated	25,849	Old rent	£580,000
Acres affected	710,000	New adjudication	£464,000
Griffith's valuation	£421,000		

Tenants' interests have acquired an average value of £4 per acre.

LAND-GRANTS (UNITED STATES).

From the year 1800 till 1881 the United States Government ceded 192 million acres of public lands to railways, 77 million to schools, 62 million to military, and 30 million for other purposes, besides 248 million acres in sales to settlers (see page 273), this last item including 67 million granted in homestead lots at twopence per acre.

LAND-OWNERS IN UNITED KINGDOM.

A.—Over 150,000 Acres.

Argyll, Duke	175,000	Lovat, Lord	162,000
Athol, Duke	195,000	Mackenzie	165,000
Baillie, Evan	166,000	Matheson	627,000
Berridge, Richard	170,000	Middleton, Lord	1,006,000
Breadalbane, Marquis	438,000	Northumberland, Duke	186,000
Buccleuch, Duke	460,000	Portland, Duke	162,000
Conyngham, Marquis	173,000	Richmond, Duke	286,000
Devonshire, Duke	193,000	Ross, C. W.	167,000
Fife, Earl	258,000	Seafield, Earl	306,000
Hamilton, Duke	157,000	Sutherland, Duke	1,358,000

B.—Rentals Over £100,000 per Annum.

Anglesea, Marquis	£107,000	Fitzwilliam, Earl	£136,000
Bedford, Duke	142,000	Haldon, Lord	109,000
Buccleuch, Duke	231,000	Hamilton, Duke	141,000
Bute, Marquis	232,000	Norfolk, Duke	270,000
Calthorpe, Lord	123,000	Northumberland, Duke	176,000
Derby, Earl	170,000	Portland, Duke	140,000
Devonshire, Duke	170,000	Ramsden, L.	175,000
Downshire, Marquis	100,000	Sutherland, Duke	142,000
Dudley, Earl	123,000	Tredegar, Lord	125,000

Digitized by Google

LAND SALES.

A.—Australian Crown Lands (1876–80).

	Acres Sold.	Annual Average.	Acres Unsold.
New South Wales	14,302,000	2,800,000	164,600,000
Victoria	1,803,000	360,000	44,090,000
New Zealand	2,350,000	470,000	52,000,000
South Australia	2,580,000	516,000	570,000,000
Queensland	2,820,000	564,000	422,700,000
Tasmania	210,000	42,000	12,640,000
West Australia	151,000	30,000	622,800,000
Total	24,216,000	4,782,000	1,888,830,000

B.—Other Colonies (1876–80).

	Acres Sold.	Annual Average.	Acres Unsold.
Cape of Good Hope	7,530,000	1,560,000	56,900,000
Ceylon	144,000	29,000	12,160,000
Trinidad	33,000	7,000	790,000
Natal	130,000	25,000	3,900,000
Total	7,837,000	1,621,000	73,750,000

C.—United States: Acres Sold.

Sale of Public Lands during 10 *Years ending* 1881.

	1872–76.	1877–81.	10 Years.
Dakota	1,478,000	8,190,000	9,668,000
Kansas	4,545,000	8,022,000	12,567,000
Nebraska	3,253,000	4,220,000	7,473,000
Minnesota	2,442,000	4,208,000	6,650,000
California	3,334,000	2,502,000	5,836,000
Wisconsin	1,811,000	880,000	2,691,000
Oregon	1,016,000	1,001,000	2,017,000
Washington	539,000	1,424,000	1,963,000
Michigan	2,054,000	1,107,000	3,161,000
Arkansas	1,142,000	1,538,000	2,680,000
Alabama	795,000	1,280,000	2,075,000
Colorada	860,000	807,000	1,667,000
Florida	570,000	713,000	1,283,000
Other States	2,663,000	3,452,000	6,115,000
Total	26,502,000	39,344,000	65,846,000

Summary of United States Lands sold since 1800.

	Acres Sold.	Amount Received.	Annual Average of Acres Sold.
1800–20	13,060,000	£4,080,000	650,000
1821–40	72,430,000	16,882,000	3,620,000
1841–60	68,520,000	12,726,000	3,426,000
1861–80	94,110,000	9,523,000	4,710,000
80 years	248,120,000	43,211,000	3,100,000

Digitized by Google

LANGUAGES.

A.—Spoken in 1801 (Thousands Omitted).

	English.	French.	German.	Italian.	Spanish.	Portuguese.	Russian.
U. Kingdom .	14,480	30	10	5	1	...	...
France . .	15	26,700	1,160	10	2	....	...
Germany . .	30	600	20,380	2	...	...	20
Russia . .	2	40	430	2	...	...	29,600
Austria . .	1	20	6,300	260	1	...	1,100
Italy . .	1	480	2	14,440	1	...	...
Spain . .	1	40	1	1	10,230	20	...
Portugal . .	1	5	1	1	30	3,030	...
Holland . .	2	30	200	...	...	...	...
Belgium . .	3	1,800	100	...	...	...	...
Scandinavia . .	1	10	20	...	...	...	10
Switzerland . .	1	400	1,400	120	...	...	...
Europe . .	14,538	30,155	30,004	14,841	10,265	3,050	30,730
U. States . .	5,250	230	280	5	5	...	...
British colonies	580	310	20	2	2	...	...
French „ .	10	450	2	2	2	...	...
Spanish America	2	10	1	3	15,430	20	...
Brazil	1	3	1	1	120	4,160	...
The East . . .	140	290	10	220	370	250	40
The World .	20,521	31,448	30,318	15,074	26,194	7,480	30,770

B.—Spoken in 1883 (Thousands Omitted).

U. Kingdom .	35,200	100	100	40	10	...	...
France . . .	180	36,400	800	250	20	...	...
Germany . . .	120	600	43,300	10	...	...	20
Russia . . .	10	200	3,700	10	2	...	63,200
Austria . . .	5	100	11,800	450	2	...	3,230
Italy	10	840	3	27,330	1	...	...
Spain	4	60	1	1	16,390	20	...
Portugal . . .	2	10	1	...	30	4,220	...
Holland . . .	5	20	400	...	...	...	...
Belgium . . .	15	3,820	240	...	...	...	...
Scandinavia . .	3	40	60	...	...	...	5
Switzerland . .	5	608	2,031	162	...	...	...
Europe . .	35,559	42,798	62,436	28,253	16,455	4,240	66,455
U. States . .	50,300	840	6,130	160	370	10	30
British colonies	11,680	1,220	80	40	40	...	...
French „ .	30	2,360	10	50	30	...	...
Spanish America	90	150	40	880	22,300	60	...
Brazil	2	20	80	70	460	8,130	...
The East . . .	2,200	430	50	420	1,180	370	240
The World .	99,861	47,818	68,826	29,873	40,835	12,810	66,725

Digitized by Google

C.—Comparison between 1801 and 1883.

Languages.	Spoken by Millions.		Aliquot Parts.	
	1801.	1883.	1801.	1883.
English . .	21	100	12·9	27·1
French . .	32	48	19·6	13·0
German . .	30	69	18·4	18·6
Italian . .	15	30	9·2	8·1
Spanish . .	26	41	16·0	11·4
Portuguese .	8	13	5·0	3·5
Russian . .	31	67	18·9	18·3
Total . .	163	368	100·0	100·0

D.—Letters Employed in Languages (Prose).

	English.	French.	Italian.	Spanish.	Latin.	German.
A . .	64	80	99	121	79	64
B . .	11	8	2	11	14	20
C . .	20	30	40	48	42	22
D . .	34	35	42	55	29	71
E . .	137	184	131	145	92	178
F . .	23	8	12	6	13	14
G . .	19	12	20	11	22	31
H . .	65	2	11	20	2	40
I . .	71	76	103	37	120	86
J . .	1	2	4	8	4	6
K . .	6	...	...	...	...	9
L . .	40	47	71	61	29	29
M . .	24	37	12	26	62	22
N . .	66	73	71	55	44	110
O . .	76	41	96	107	50	27
P . .	23	33	28	24	32	11
Q . .	1	8	9	15	11	...
R . .	70	73	52	69	77	84
S . .	75	99	74	69	79	55
T .	88	70	55	48	66	48
U . .	34	58	47	46	106	49
V . .	18	17	15	10	18	9
W . .	16	...	...	...	...	20
X . .	1	5	...	...	9	...
Y . .	17	2	...	5	...	...
Z . .	...	...	6	3	...	4
Total .	1,000	1,000	1,000	1,000	1,000	1,000

Where blanks occur it shows either that the letter is not used, or that the use does not reach 1 in 1000, such as "z" in English, or "x" in Spanish. The Spanish N, of which 55 are used, includes three "ñ," equivalent to "ny" in English.

Digitized by Google

LATITUDE AND LONGITUDE.

A.

	Latitude.	Longitude.		Latitude.	Longitude.
Algiers . .	36·46 N.	3·6 E.	Liverpool .	53·24 N.	2·58 W.
Amsterdam	51·21 „	4·58 „	London .	51·31 „	0·5 „
Antwerp .	51·13 „	4·25 „	Madeira .	33·0 „	18·0 „
Archangel.	65·40 „	43·0 „	Madras .	13·12 „	80·21 E.
Azores . .	28·0 „	26·0 W.	Madrid .	40·28 „	3·40 W.
Bagdad. .	33·20 „	44·24 E.	Malta . .	35·54 „	14·27 E.
Baltimore .	39·15 „	76·30 W.	Manchester	53·29 „	2·14 W.
Belfast . .	54·36 „	5·55 „	Manilla .	14·35 „	120·48 E.
Berlin . .	52·33 „	13·25 „	Marseilles .	43·18 „	5·28 „
Bombay .	19·2 N.	72·50 E.	Mauritius .	20·15 S.	57·0 „
Bordeaux .	45·0 „	0·20 W.	Melbourne	37·52 „	145·0 „
Boston . .	42·20 „	71·9 „	Mexico . .	19·30 N.	99·2 W.
Brussels .	50·52 „	3·21 E.	Milan . .	45·40 „	9·10 E.
Bucharest .	44·28 „	26·9 „	Montreal .	45·30 „	73·30 W.
Buda-Pesth	47·31 „	19·1 „	Moscow .	55·40 „	37·28 E.
B. Ayres .	34·36 S.	58·22 W.	Munich .	48·7 „	11·35 „
Cadiz . .	36·32 N,	6·18 „	Naples . .	40·52 „	14·15 „
Cairo . .	30·5 „	31·45 E.	N. Orleans	30·7 „	90·0 W.
Calcutta .	22·40 „	88·25 „	New York	40·40 „	74·0 „
Canton . .	23·10 „	113·9 „	Palermo .	38·6 „	13·23 E.
Cape Town	34·30 S.	18·0 „	Paris . .	48·52 „	2·21 „
Caracas .	10·30 N.	67·10 W.	Pekin . .	40·0 „	116·23 „
Chicago .	42·0 „	83·31 „	Philadelphia	39·52 „	77·30 W.
Cincinnati	39·0 „	84·15 „	Prague . .	50·5 „	14·25 E.
Constantinople .	41·1 „	28·58 E.	Quebec . .	46·50 „	72·0 W.
			Quito . .	0·7 S.	78·49 „
Copenhagen	55·42 „	12·34 „	Rio Janeiro	23·0 „	43·20 „
Demerara .	5·30 „	58·20 W.	Rome . .	41·53 N.	12·28 E.
Dresden .	51·6 „	13·36 E.	Rotterdam	51·55 „	4·29 „
Dublin . .	53·21 „	6·17 W.	St. Louis .	38·40 „	90·12 W.
Edinburgh	55·57 „	3·12 „	St. Petersburg .	59·40 „	31·0 E.
Falkland Is.	51·30 S.	59·0 „			
Faroe Is. .	62·0 N.	7·0 „	S. Francisco	37·59 „	121·59 W.
Florence .	43·45 „	11·16 E.	Sierra Leone	8·45 „	13·10 „
Frankfort .	50·8 „	8·33 „	Singapore .	1·27 „	103·48 E.
Geneva . .	46·2 „	6·9 „	Stockholm	59·20 „	18·0 „
Genoa . .	44·30 „	9·0 „	Sydney . .	34·0 S.	151·12 E.
Gibraltar .	36·8 „	5·20 W.	Teneriffe .	28·30 N.	17·0 W.
Glasgow .	55·52 „	4·8 „	Toronto .	43·47 „	79·25 „
Guatemala	14·0 „	88·0 „	Trinidad .	10·50 „	61·15 „
Halifax .	44·30 „	63·55 „	Tunis . .	36·44 „	10·5 E.
Hamburg .	53·34 „	10·3 E.	Turin . .	45·5 „	7·44 „
Havanna .	23·7 „	82·28 W.	Valparaiso	33·02 S.	71·45 W.
Hobart . .	42·54 S.	147·27 E.	Venice . .	45·27 N.	12·25 E.
Jersey . .	49·15 N.	2·5 W.	Vera Cruz	19·30 „	96·40 W.
Jerusalem .	31·48 „	35·10 E.	Vienna . .	48 9 „	16·24 E.
Lima . .	12·0 S.	77·0 W.	Warsaw .	52·15 „	21·0 „
Lisbon . .	38·44 N.	9·6 „	Washington	38·55 „	77·5 W.

Digitized by Google

B.—Degrees of Longitude, English Miles.

Latitude.	Degree of Long. Miles.	Latitude.	Degree of Long. Miles.
10	68½	40	54
15	67½	45	50
20	65½	50	45
25	63½	60	35
30	59½	70	24
35	57	80	12

LEAD.

Production of Metallic Lead (Tons).

	1830.	1850.	1880.	Value in 1880.
Great Britain .	48,000	55,000	51,000	£850,000
France . .	1,100	7,000	32,000	650,000
Germany . .	9,500	16,000	58,600	1,120,000
Italy . . .	8,000	12,000	33,000	580,000
Spain . . .	23,000	27,000	92,300	1,660,000
Austria . .	7,000	11,000	8,900	160,000
Greece, Belgium, &c.	4,000	6,500	14,400	260,000
Europe . .	100,600	134,500	290,200	£5,280,000
United States .	3,700	36,000	89,000	1,580,000
Total .	104,300	170,500	379,200	£6,860,000

Good lead ore gives 70 per cent. of lead, and in smelting it takes 2 tons of coal to produce 3 tons of lead. The Cordoba mines in Spain are said to be the richest in the world. The Missouri lead-field, near Chicago, is 1½ miles in length, the ore giving 70 per cent. lead. The importation of lead into the United States fell from 42,000 tons in 1870 to 4,000 in 1880.

LEATHER.—The production and manufacture have been as follows:—

Year.	Millions Lbs. Leather.			Manufactured Value (Thousands).		
	British Hides.	Foreign Hides.	Total.	Home.	Export.	Total.
1805 . .	27	...	27	£6,000	£15	£6,015
1820 . .	36	12	48	9,000	40	9,040
1830 . .	40	30	70	12,600	80	12,680
1840 . .	45	37	82	14,200	170	14,370
1850 . .	50	70	120	19,700	610	20,310
1860 . .	55	87	142	22,300	2,130	24,430
1870 . .	60	132	192	28,600	2,640	31,240
1881 . .	65	144	205	30,100	3,930	34,030

A cow-hide gives 35 lbs., a horse's 18 lbs. leather. See *Hides.*

Digitized by Google

LEGACY RETURNS.

A.—United Kingdom.

Years.	Annual Average, Millions £.	Estimate of Public Wealth, Millions £.	Ratio of Wealth per Inhabitant.
1811–20 . .	25·5	2,460	£124
1841–50 . .	43·9	4,420	165
1861–70 . .	73·6	5,970	201
1880 . .	118·7	8,440	242

The above does not include succession property, which amounts to about one-third of the former.

B.—Legacy and Succession Property, and Deaths.

	Property, Millions £.		Deaths, Thousands.		Property to each Death.	
	1840.	1877.	1840.	1877.	1840.	1877.
England . . .	47·1	107·9	360	501	£131	£216
Scotland . . .	3·1	16·1	54	74	56	217
Ireland . . .	4·5	7·3	172	94	26	78
United Kingdom .	54·7	131·3	586	669	£93	£197

The returns for Scotland in 1840 did not include mortgages, and if these were added, the averages would be 25 per cent. higher, say £70 per inhabitant instead of £56.

C.—Number of Estates Proved in 1877.

Amount.	England.	Scotland.	Ireland.	U. Kingdom.
Over £20,000	945	125	59	1,129
£5,000 to 20,000	2,784	356	199	3,339
1,000 „ 5,000	7,625	1,262	800	9,687
300 „ 1,000	10,387	1,545	1,070	13,002
100 „ 300	11,526	1,022	1,201	13,749
Total	33,267	4,310	3,329	40,906

The number of persons who left property at their death, compared with the general deaths of the population in 1877, shows a ratio of 66 per 1000 in England, 58 in Scotland, and only 35 per 1000 in Ireland, or a general average of 61 per 1000 for the United Kingdom.

Digitized by Google

D.—Amounts Proved in 1877.

Estates.	Aggregate, Millions £.			
	England.	Scotland.	Ireland.	U. Kingdom.
Over £20,000	55·2	8·6	2·9	66·7
£5,000 to 20,000	27·4	3·5	1·9	32·8
1,000 „ 5,000	17·2	2·8	1·7	21·7
300 „ 1,000	6·0	0·9	0·6	7·5
Under 300	2·1	0·2	0·2	2·5
Total .	107·9	16·0	7·3	131·2

It appears from the above that one-half of the wealth of the United Kingdom is held by persons who leave at least £20,000 at death, and only one-tenth by those whose estates are proved under £1000. The persons in easy circumstances, between £1000 and £20,000, represent 40 per cent. of the wealth of the nation.

E.—Ratio of Inheritances and Successions.

Amount Proved.	Per 1000 Deaths of Population (1877).			
	England.	Scotland.	Ireland.	U. Kingdom.
Over £30,000	1·16	1·13	0·37	1·04
£20,000 to 30,000	0·73	0·55	0·25	0·64
10,000 „ 20,000	2·20	1·93	0·81	1·97
5,000 „ 10,000	3·36	2·88	1·29	3·01
1,000 „ 5,000	15·25	17·05	8·48	14·45
600 „ 1,000	7·98	8·41	4·47	7·51
300 „ 600	12·79	12·47	6·87	11·89
100 „ 300	23·05	13·81	12·73	20·52
Total .	66·52	58·23	35·27	61·03

F.—Estates in England over £250,000.

The aggregate of wills proved over ¼ million sterling in the past 10 years shows thus:—

	Thousands Omitted.		Thousands Omitted.
1873 . .	£12,700	1878 . .	£9,200
1874 . .	5,600	1879 . .	12,200
1875 . .	7,800	1880 . .	17,800
1876 . .	9,900	1881 . .	8,000
1877 . .	7,400	1882 . .	7,700
5 years .	£43,400	5 years .	£54,900

Digitized by Google

G.—Legacy Returns in France.

Year.	Amount Proved, Millions £.	Per Death of Population.	Per Living Inhabitant.
1830	58	£73	£1 16 0
1840	64	75	1 18 0
1850	81	93	2 6 0
1860	109	130	3 1 0
1870	135	128	3 15 0
1880	210	247	5 17 0

H.—France and Great Britain Compared.

	Amount of Probate, Millions £.		Ratio per Death of Population.	
	1860.	1880.	1860.	1880.
France	109	210	£130	£247
Great Britain	89	145	184	242
United Kingdom	95	154	160	220

Real estate is in France only 49 per cent., whereas in Great Britain it forms 62 per cent. of the public riches.

From the above table it would appear that the wealth of France is greater than that of Great Britain, but this is not true. In the first place, the French include properties under £100, which we do not; and in the second place, their death-rate being 15 per cent. higher than ours, the transfer of property is 15 per cent. more rapid than in Great Britain.

I.—Testamentary Estates in Holland.

Year.	Value, Millions £.	Estimated Public Wealth, Millions £.	Per Inhabitant.
1850	12	380	£113
1860	15	480	120
1870	21	670	175
1880	30	960	240

From this it would appear that wealth has grown more rapidly in Holland than in the United Kingdom. See Table A.

The components of Dutch testamentary estates in 1880 were as follows:—

Houses and lands	£11,600,000
Furniture and bullion	2,300,000
Shares, bonds, scrip, &c.	15,800,000
Total	£29,700,000

Digitized by Google

LEGUMINOUS PLANTS.

Europe . . .	184	South America	605	Levant . . .	250
Mediterranean .	468	Australia . .	229	North Africa .	108
United States .	183	China . . .	77	Central Africa .	130
Mexico . . .	152	East Indies .	452	South Africa .	395
West Indies . .	221	Siberia . . .	129	Islands . . .	42

LEMONS.—Italy has 4,800,000 trees, which produce 1260 million lemons per annum.

LEPROSY.—There are in Norway 2180 lepers. The numbers in Spain and Italy are considerable. In the Sandwich Islands the disease is so prevalent that the island of Molokai is set apart for lepers, who are under the direction of a French priest. In the Seychelles Islands leprosy is also common.

In Cyprus a leper-farm was established in 1830, one mile from Nicosia: area 100 acres, tillage 11 acres; house of 26 rooms occupied by—

Greeks	44	Males	33
Turks	2	Females . . .	13
Total . . .	46	Total . . .	46

Death-rate, 16 per cent. per annum; new patients, 14 in the year (1879). All very clean. Five married couples; two have children quite healthy, but rest are childless. All the lepers have lost fingers. One woman of 80 has been there 50 years.

LETTERS.—The annual circulation in the principal countries is shown as follows:—

Country.	Millions.	Number per Inhab.	Country.	Millions.	Number per Inhab.
England . .	1,220	44	Russia . .	110	1¼
Scotland . .	127	33	Austria . .	483	13
Ireland . .	91	18	Italy . . .	196	7
United Kingdom	1,438	40	Spain . .	71	4
United States .	1,155	22	Holland .	71	18
France . .	595	15	Belgium .	91	17
Germany . .	721	16	Switzerland .	65	24
Swed. and Nor. .	46	7	Canada . .	57	13
Denmark . .	25	13	Australia .	36	12
Portugal . .	16	4	Japan . .	48	2

Digitized by Google

LIBRARIES.

A.—Public Libraries of all Countries.

	Libraries.		Vols. (Thousands).		Vols. per 100 Inhabitants.	
	1848.	1880.	1848.	1880.	1848.	1880.
United Kingdom	28	202	1,542	3,770	6	11
France	107	505	3,975	7,298	11	19
Germany . . .	80	594	3,053	4,070	9	9
Russia	12	145	451	950	1	1
Austria	41	577	2,193	5,476	7	14
Italy	45	493	2,274	4,349	11	15
Spain and Port. .	24	90	963	1,200	6	6
Switzerland . .	13	1,654	465	1,819	22	64
Belgium . . .	10	105	400	610	9	11
Holland . . .	10	220	330	800	11	20
Scandinavia . .	13	94	968	1,250	16	17
Europe . . .	383	4,679	16,614	31,592	7	10
United States .	20	59	600	2,263	2	4
Total . . .	403	4,738	17,214	33,855	6	9

The above does not include any libraries with less than 10,000 volumes (except possibly those of Switzerland), nor school libraries, of which there are 23,000 in the United States, with 45 million books.

B—Principal Libraries of the World.

	Thousands.			Thousands.	
	Vols.	MSS.		Vols.	MSS.
British Museum .	1,120	41	Copenhagen . . .	410	5
Imperial, Paris .	2,078	86	Gottingen . . .	400	5
St. Petersburg .	1,045	34	Oxford	300	22
Berlin	740	15	Brussels	210	20
Munich	810	24	St. Genevieve, Paris	250	30
Vienna	420	21	Washington . . .	230	...
Dresden . . .	500	4	Boston	202	...
Vatican	340	32	Astor, New York .	160	...

The library of the British Museum has 32 miles of shelves filled with books, and is visited by 91,000 readers yearly. The Bibliotheque Imperiale of Paris has 18 miles of books and 37,000 readers yearly.

Digitized by Google

LIFE.

A.—Expectation at Various Ages, in Years.

Age.	England.	U. States.	Belgium.	Holland.	Saxony.	Sweden.
10	49·2	48·7	44·3	46·5	47·0	48·0
20	41·0	42·2	37·1	38·9	39·3	40·1
30	33·6	35·3	31·2	32·1	32·1	33·2
40	26·7	28·2	25·5	26·2	25·0	25·9
50	20·2	20·9	19·6	20·0	18·0	19·1
60	13·9	14·1	13·2	13·3	11·7	12·9
70	8·9	8·5	8·2	8·0	6·9	8·0
80	5·5	4·4	5·3	4·6	3·9	4·1

B.—Expectation according to Sex: Years to Live.

Age.	England.		Holland.		Sweden.		Belgium.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Birth .	41·9	45·2	34·1	36·4	41·3	45·6	...	...
5 years	51·5	53·6	48·7	49·2	49·4	53·0	...	...
10 „	48·2	50·3	45·9	46·5	46·5	50·0	43·8	44·8
20 „	39·9	42·1	38·3	39·2	38·6	42·1	36·4	37·7
30 „	33·2	34·1	31·8	32·4	31·2	34·5	30·5	31·9
40 „	26·5	27·5	25·0	26·4	24·3	27·2	24·8	26·1
50 „	19·9	20·8	18·5	19·7	18·0	20·1	18·9	20·3
60 „	13·6	14·5	12·8	13·3	12·3	13·5	12·4	13·9
70 „	8·6	9·1	7·9	8·1	7·4	8·0	8·1	8·3
80 „	5·2	5·6	4·4	4·5	3·9	4·3	5·2	5·4
90 „	2·8	3·1	2·4	2·7	2·4	2·8	2·9	3·1

C.—Improved Expectation in England (Humphreys).

Ages.	Persons.		Male.		Female.	
	1838-54.	1876-80.	1838-54.	1876-80.	1838-54.	1876-80.
0 years . . .	40·86	43·56	39·91	41·92	41·85	45·25
5 „ . . .	50 02	52·56	49 71	51·47	50·33	53·65
10 „ . . .	47·36	49·24	47·05	48·16	47·67	50·32
15 „ . . .	43·54	45·05	43·18	43·94	43·90	46·15
20 „ . . .	39·88	40·98	39·48	39·86	40·29	42·10
25 „ . . .	36·57	37·21	36·12	36·05	37·04	38·36
35 „ . . .	29·99	30·01	29·40	28·88	30·59	31·12
45 „ . . .	23·41	23·29	22·76	22·34	24·06	24·21
55 „ . . .	16·94	16·75	16·45	16·09	17·43	17·37
65 „ . . .	11·17	11·19	10·82	10·79	11·51	11·55
75 „ . . .	6·72	6·81	6·49	6·52	6·93	7·04
85 „ and upwards .	3·87	4·00	3·73	3·78	3·98	4·15

Digitized by Google

D.—Expectation according to Condition.

Age.	Years to Live.			
	Gentry.	Farm Labourers.	Sober.	Intemperate.
20	38	48	40	14
30	31	41	34	13
40	24	33	27	10
50	18	25	20	8
60	12	18	14	6

E.—Expectation according to Profession (England).

Will Reach 70 Years of Age.

	Per Cent.		Per Cent.		Per Cent.
Physicians	24	Lawyers	29	Merchants	33
Teachers	27	Clerks	32	Farmers	40
Artists	28	Soldiers	32	Clergy	42

F.—American Life-Average for Professions (Boston).

	Years.		Years.
Shopmen	41·8	Mechanics	47·3
Waggoners	43·6	Merchants	48·4
Labourers	44·6	Lawyers	52·6
Seamen	46·1	Farmers	64·2

G.—Improved Survivals in England (Humphreys).

Ages.	Persons.		Males.		Females.	
	1838–54.	1876–80.	1838–54.	1876–80.	1838–54.	1876–80.
No. born	1000·0	1000·0	1000·0	1000·0	1000·0	1000·0
5 years	736·8	750·9	723·7	736·4	750·6	766·0
10 „	702·5	726·8	689·9	712·1	715·8	742 0
15 „	684·6	714·5	672·8	700·1	696·9	729·3
20 „	662·8	699·1	651·9	684·9	674·1	713·8
25 „	634·0	677·5	624·2	663·8	644·3	691·7
35 „	572·0	623·1	564·4	608·1	579·9	638·7
45 „	502·9	550·5	495·8	530·8	510·4	571·0
55 „	421·1	462·1	409·5	435·3	433·3	489·9
65 „	309·0	333·4	294·6	303·9	324·2	363·9
75 „	161·1	173·1	148·1	151·5	174·8	195·5
85 „	38·6	42·1	33·0	33·9	44·4	50·7
95 „	2·2	2·6	1·6	1·7	2·7	3·5

Digitized by Google

H.—TABLE OF SURVIVALS OF 1000 PERSONS BORN.

	Age 10.		Age 30.		Age 50.		Age 70.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
England	364	362	305	299	233	231	114	124
France .	334	347	287	297	233	240	120	129
Belgium	342	350	283	288	202	208	90	110
Prussia .	313	326	274	288	213	225	97	109
Spain .	272	288	224	239	188	199	104	121
Norway	386	394	339	352	278	292	163	186

I.—KASPER'S TABLE OF RICH AND POOR.

Survival of 1000 *Born.*

Age.	Rich.	Poor.	Age.	Rich.	Poor.
5 . . .	943	655	40 . . .	695	396
10 . . .	938	598	60 . . .	398	172
20 . . .	886	566	70 . . .	235	65

LIFE-ANNUITIES.—This system of insurance is common in France, where the annuity-fund in 1881 amounted to 16 millions sterling, and the new annuities purchased yearly average a capital value of £900,000. The annuities now running average as follows:—

	Per Annum.		Per Annum.
Military officers . .	£95	Physicians . . .	£56
Naval do.	90	Farmers	40
Men of property . .	62	Workmen . . .	36
Civil service . . .	60	Servants	26

See *Insurance.*

LIFEBOATS.—There are 272 in the United Kingdom, maintained by voluntary donations amounting to £43,000 per annum. They are manned by 12,000 voluntary seamen, the coxswain alone being paid, to mind the boat. Since their establishment in 1824 these boats have saved 29,608 lives, and in 1882 they saved 23 vessels and 884 lives.

Lifeboats were established in France by the Empress Eugenie in 1866, and are now in use at 37 exposed points of coast.

LIFE-INSURANCE. See *Insurance.*

Digitized by Google

LIGHT.—It requires 50 lbs. of tallow candles to produce as much light as 1000 cubic feet of gas. Dr. Frankland's table (1866) of the cost of light was as follows:—

	Cost for 10 Hours of Light.
One gallon paraffin oil . . .	6 pence
Equivalent amount of gas . .	3 „
33 tallow candles	32 „
16 paraffin „	46 „
20 sperm „	84 „
24 wax „	87 „

The electric light has been found at the Kensington Museum to cost much less than gas. See *Electric.*

LIGHTHOUSES.—The number has quadrupled since 1830, viz.:—

	1830.	1840.	1870.	1880.
United Kingdom . .	260	317	410	556
France	63	138	210	291
Germany	20	22	24	25
Russia	18	63	85	103
Italy	10	55	121	145
Spain and Portugal .	15	22	108	151
Belgium and Holland .	12	36	73	115
Scandinavia . . .	180	196	205	207
Greece and Turkey . .	85	88	77	114
Europe	613	887	1,313	1,707
United States . . .	130	220	413	632
Canada	38	41	400	451
Spanish America . .	15	17	38	44
West Indies . . .	40	43	104	110
Africa	20	23	57	93
Australia	10	12	45	102
Asia	30	32	149	162
Total . .	896	1,275	2,519	3,301

LIGHTNING, KILLED BY.

	Yearly Average.	Per 100,000 Deaths.		Yearly Average.	Per 100,000 Deaths.
England . . .	23	4·4	Germany . .	165	15·1
France . . .	92	10·2	Russia . .	908	36·3

The number has fluctuated in England as follows:—

	Annual Average.			
Years.	Males.	Females.	Total.	Ratio in 100,000 Deaths.
1850–59 . .	16	5	21	4·8
1860–69 . .	10	3	13	2·7
1870–79 . .	19	4	23	4·4

Digitized by Google

LINEN.

A.—Linen Manufacture of all Nations.

	Thousands.			Value of Product, Millions £.
	Spindles.	Power-Looms.	Flax, Tons.	
United Kingdom	1,485	45	107	12·0
France	762	23	66	8·0
Germany	327	8	35	4·0
Russia	145	2	40	4·0
Austria	415	5	60	7·6
Italy and Switzerland	64	1	10	1·2
Belgium and Holland	296	6	30	3·8
United States	13	7	20	2·6
Total	3,507	97	368	43·1

B.—Linen Manufacture in Ireland.

Year.	Million Yards.	Value.	Pence per Yard.	Value of Manufacture per Inhab.
1726	4½	£205,000	9·6	26 pence
1766	18	1,080,000	14·5	99 „
1806	44	2,220,000	12·2	102 „
1836	71	2,631,000	9·1	76 „
1880	169	5,555,000	7·9	258 „

The abolition of the "bounties," in 1833, was followed by a great increase of production, and the introduction of steam-power by Messrs. Mulholland had a further happy effect. The number of power-looms has risen from 30 in 1857 to 19,200 in 1883.

C.—Linen Industry of United Kingdom.

Year.	Flax Consumed, Million Lbs.	Linen Made, Million Yds.	Exported, Million Yds.	Yarn Export, Million Lbs.	Value of Total Manufacture.
1806	48	74	8	...	£3,820,000
1820	87	131	40	...	5,880,000
1830	138	206	62	...	7,615,000
1840	210	285	87	16	10,790,000
1850	248	344	120	18	12,624,000
1860	228	290	144	31	11,418,000
1870	291	413	226	13	15,190,000
1881	227	310	174	18	11,705,000

D.—Linen Factories of United Kingdom (1879).

	No. of Factories.	Spindles.	Power-Looms.	Operatives.
England	101	191,000	4,100	15,000
Scotland	155	265,000	16,800	37,000
Ireland	144	809,000	19,600	56,000
United Kingdom	400	1,265,000	40,500	108,000

Digitized by Google

LIQUOR DUTIES.

A.

	Amount, Thousands £.	Shillings Per Inhab.		Amount, Thousands £.	Shillings Per Inhab.
England . .	19,406	15	Italy . .	1,116	1
Scotland . .	4,092	22	Holland .	1,827	9
Ireland . .	3,156	13	Belgium .	1,802	7
U. Kingdom .	26,654	16	Sweden .	813	4
France . .	15,712	9	Norway .	246	3
Germany . .	5,728	3	Denmark .	204	2
Russia . . .	27,808	7	Japan . .	1,195	1
Austria . .	4,423	2	U. States .	17,700	7

B.—Liquor Dues in United Kingdom.

	Thousands of £.			
	Malt.	British Spirits.	Imported Wines, &c.	Total.
England . . .	6,025	8,475	4,906	19,406
Scotland . . .	365	3,162	565	4,092
Ireland	377	2,591	188	3,156
United Kingdom .	6,767	14,228	5,659	26,654

The liquor trade in the United Kingdom employs 846,000 persons, and a capital of 117 millions sterling.

LIVING, COST OF.

A.—Expenditure among Nations.

	Millions £.				Per Inhab.	Millions £.	
	Food.	Clothing.	Sundries.	Total.		Income.	Surplus.
U. Kingdom .	473	138	482	1,093	£31·3	1,247	154
France . . .	392	112	321	825	21·7	965	140
Germany . . .	506	110	194	810	18·0	850	40
Russia	516	122	112	750	8·8	760	10
Austria . . .	320	90	152	562	15·2	602	40
Italy	204	30	48	282	9·9	292	10
Spain	123	20	35	178	10·6	188	10
Belg. and Holl.	102	30	72	204	21·1	224	20
Scandinavia . .	75	20	44	139	15·5	149	10
Europe . . .	2,711	672	1,460	4,843	£16·1	5,277	434
United States .	574	240	396	1,210	22·4	1,420	210
Total .	3,285	912	1,856	6,053	£17·2	6,697	644

Food includes liquor and tobacco, and therefore contributes a good share of the taxes in each country. Clothing also pays its share to the public revenue.

Digitized by Google

B.—Gentleman's Family in London.

	1792	1823.	1845.	1883.
Rent	£60	£90	£100	£120
Taxes	18	40	30	40
Servants (2)	18	24	30	40
Clothing	60	70	80	100
Bread	25	26	25	20
Meat	25	30	50	80
Groceries	22	35	40	60
Wines	23	39	40	40
Dairy	50	70	70	90
Coal and light	30	38	30	25
Washing	16	22	30	40
Sundries	58	81	95	110
Total	£405	£565	£620	£765

Family of 5 persons, besides 2 servants.

C.—Tradesman's Family (Bristol).

	1792.	1823.	1845.	1883.
Rent	£10	£15	£18	£20
Clothing	10	12	12	15
Bread	20	21	20	16
Meat	10	14	20	28
Groceries	10	15	20	22
Sundries	10	13	15	19
Total	£70	£90	£105	£120

D.—English Labourer and Mechanic.

	Labourer.			Mechanic.		
	1792.	1823.	1883.	1792.	1823.	1883.
Bread, meat, &c.	£16	£17	£20	£18	£20	£22
Groceries	2	3	5	4	6	8
Rent	2	3	4	3	4	6
Clothing, &c.	7	8	8	17	22	24
Total	£27	£31	£37	£42	£52	£60

E.—Relative Class Expenditure (1880).

	France.			Germany.		
	Rich.	Middle.	Working.	Rich.	Middle.	Working.
Food	41	53	57	42	58	62
Rent	15	23	30	10	18	23
Sundries	44	24	13	48	24	15
Total	100	100	100	100	100	100

Digitized by Google

F.—Cost of Workmen's Food (1880).

	Shillings per Week.		Food. Ratio, per Cent.
	Wages.	Food.	
Great Britain . .	31	14	45
France . . .	21	12	57
Germany . . .	16	10	62
Belgium . . .	20	12	60
Italy	15	9	60
Spain	16	10	62
United States . .	48	16	33
Australia . . .	40	11	28

G.—Artisan's Family in Paris (1882).

	Weekly Expenditure.		Per Annum.
Bread . .	40 lbs.	90 pence	£19 10 0
Meat, fish . .	10 „	63 „	13 10 0
Cheese . .	2 „	18 „	3 18 0
Milk . . .	7 pints	21 „	4 10 0
Wine . . .	7 „	35 „	7 12 0
Vegetables . .	14 lbs.	21 „	4 10 0
Coffee . .	1 lb.	14 „	3 0 0
Sugar and salt .	...	7 „	1 10 0
Fuel and light .	...	10 „	2 3 0
Clothing . .	...	24 „	5 4 0
Rent, 2 rooms .	...	30 „	6 10 0
Total .	...	£1 7 9	£71 17 0

An artisan and wife earn usually £78 per annum.

H.—Cost of Living in France and in Paris.

Year.	Per Annum.		Ratio.	
	France.	Paris.	France.	Paris.
1789 . . .	£15	£29	100	192
1826 . . .	16	41	100	255
1840 . . .	19	48	100	251
1860 . . .	44	114	100	260
1880 . . .	51	135	100	265

I.—Russian Fisherman's Family.

(Roubles = 2s. each.)

Income.	Roubles.	Expenditure.	Roubles.
Game, 200 lbs. . .	25	Rye, 1 ton . . .	70
Caviar, 200 „ . .	25	Taxes	23
Fish	50	Clothing . . .	25
Wood-cutting . .	25	Sundries . . .	7
Total .	125	Total .	125

Digitized by Google

K.—French Noble Family (1679).

	House Expenses.		Per Annum.
Meat	£44	Food, &c.	£240
Bread	20	Rent	40
Wine	20	Wages	40
Butter	36	Opera, &c.	120
Sundries	120	Dress, &c.	160
Total	£240	Total	£600

Family comprised the Count, Countess, 7 male and 3 female servants; and Mme. de Maintenon writes to the Countess, "My dear sister, you can live like a princess on £600 a year."

LLAMAS.—There are 4 millions in Peru, mostly employed as beasts of burden. The skin weighs 6 lbs., gives 18 feet of leather, and is worth 20 shillings.

LLOYD'S.—See *Insurance.*

LOANS.—The total of foreign loans quoted on the London Stock Exchange in 1825 amounted to no more than 105 millions sterling. They have increased 22-fold.

A.—Loans Quoted in 1881.

Millions £.

Australia	94	Egypt	84	Paraguay	3
Austria	237	France	301	Peru	32
Belgium	27	Germany	30	Portugal	38
Brazil	22	Greece	11	Russia	145
Canada	28	Holland	80	River Plate	24
Ceylon	1	Honduras	3	Roumania	1
Chili	7	India	83	Spain	176
China	2	Italy	290	Sweden	8
Colombia	10	Japan	2	South Africa	12
Costa Rica	3	Mexico	28	Turkey	144
Denmark	1	Norway	4	United States	304

The above amounts do not represent in all cases the whole of the external debt, much less the entire public debt of the various countries, for which see *Debt.*

The total of British capital in foreign loans and railways is estimated to be 1058 millions sterling. See *Investments.*

Digitized by Google

B.—British National Loans (1756–1800).

Year.	Amount.	Interest per £100.	Year.	Amount.	Interest per £100.
1756 .	£2,000,000	£3 12 0	1780 .	£12,000,000	£5 16 8
1757 .	3,000,000	3 14 3	1781 .	12,000,000	5 11 1
1758 .	5,000,000	3 6 5	1782 .	13,500,000	5 18 1
1759 .	6,600,000	3 10 9	1783 .	12,000,000	4 13 9
1760 .	8,000,000	3 13 7	1784 .	6,000,000	5 6 11
1761 .	12,000,000	4 1 11	1793 .	4,500,000	4 3 4
1762 .	12,000,000	4 10 9	1794 .	11,000,000	4 10 9
1763 .	3,500,000	4 4 2	1795 .	18,000,000	4 15 8
1776 .	2,000,000	3 9 8	1796 .	25,500,000	4 14 0
1777 .	5,000,000	4 5 2	1797 .	32,500,000	6 0 4
1778 .	6,000,000	4 18 7	1799 .	18,500,000	5 6 4
1779 .	7,000,000	5 18 10	1800 .	20,500,000	...
	Total			£258,100,000	

The above shows the actual interest paid by the nation, comparing the nominal rate with the amount realised of each loan.

C.—Loans Guaranteed by British Government.

	Original Sum.	Balance in 1881.
Russian Dutch . .	£2,000,000	£650,000
Canada . . .	6,300,000	6,300,000
New Zealand . .	2,000,000	2,000,000
Turkey . . .	5,000,000	3,800,000
Greece . . .	800,000	...
West Indies . .	886,000	359,000
Irish Church . .	10,700,000	7,400,000
Board of Works .	7,930,000	1,388,000
Total . .	£35,616,000	£21,897,000

D.—French Loan of 1872.

Subscribed Millions £.

Paris	510	England	280
Departments . . .	155	Germany	180
Belgium	360	Italy and Switzerland .	39
Holland	112	Other countries . . .	117

The subscriptions amounted to twelve times the required sum.

Digitized by Google

LOCOMOTIVES.

	Number in 1880.	Annual Traffic per Locomotive. Passengers.	Goods, Tons.
United Kingdom	13,480	97,800	31,500
United States	17,790	22,200	23,600
Germany	9,400	43,000	30,100
France	6,220	51,600	21,200
Austria	3,600	18,800	25,300
Russia	3,560	20,500	16,500
Italy	1,600	35,200	9,700
Other countries	7,460	35,400	14,700
Total	63,020	48,030	25,400

For passenger trains a locomotive burns one ton of coke per 80 miles, and for goods trains per 40 miles. The consumption in the United Kingdom is equal to 6 million tons of coal per annum, and the railways of the world burn 25 million tons, although wood is used in some countries. An ordinary locomotive, say 300 horse-power, will cost £2000, and during its life run about 200,000 miles, say 13,000 miles per annum for 15 years. One house at Berlin, that of Mr. Borsig, has turned out 4000 locomotives since 1840, in which year Mr. Borsig began with a capital of £1500, lent him by a friend: he employs 10,000 workmen.

The most powerful locomotives in the world are on the Chicago railway: 50 tons weight, 61 feet long, tender 3000 gallons, cylinder 18 × 24 inches, with 6 feet driving-wheel.

LOCUSTS.—In Russia 600 soldiers can sweep one ton of locusts into ditches per day, and destroy them. In Cyprus the peasants destroy annually 60 tons of locust eggs, equal to 680 million locusts, at a cost of £2400, say £40 per ton.

LOCUST-TREE.—The carob or algarroba covers 19,000 acres in Cyprus, averaging 30 trees per acre. Average crop 25,000 tons, worth £75,000, most of which goes to Scotland to be made into whiskey.

LODGINGS IN PARIS.

Ordinary Rent per Annum. Unfurnished.		Furnished (Boulevards).	
1 room, suburbs	£8	3 rooms, 5th flat	£160
2 rooms, „	12	3 „ 4th „	200
2 „ Passy	15	3 „ 3d „	250
2 „ Madeleine	20	3 „ 2d „	300
2 „ R. Rivoli	30	4 „ R. Rivoli	400
3 „ „	50	5 „ „	600

Digitized by Google

LONDON.

A.—Growth of London.

Year.	Thousands.		Miles of Streets.	Value of House Property.		
	Population.	Houses.		Millions £.	Per House.	Per Inhab.
1801 .	959	130	470	67	£513	£70
1811 .	1,139	155	560	82	528	72
1821 .	1,379	170	610	96	567	70
1831 .	1,655	197	700	124	630	76
1841 .	1,948	256	905	174	677	89
1851 .	2,362	301	1,050	229	762	97
1861 .	2,804	369	1,290	306	828	110
1871 .	3,254	445	1,550	434	975	133
1881 .	3,815	520	1,740	601	1,156	158

B.—Comparison of London and Paris.

Year.	Population, Thousands.		Increase per Annum, Thousands.		Ratio to Population of Nation.	
	London.	Paris.	London.	Paris.	London.	Paris.
1801 . .	959	553	...	...	6·11	2·01
1821 . .	1,379	724	21	8	6·60	2·40
1841 . .	1,948	935	29	11	7·21	2·73
1851 . .	2,362	1,053	41	12	8·60	3·01
1861 . .	2,804	1,696	44	64	9·67	4·67
1871 . .	3,254	1,761	45	7	10·30	4·75
1881 . .	3,815	2,226	56	46	10·90	5·87

London has 11,040 police, 11,260 cabs, and 1620 omnibuses: the cabs and busses carry 73 million passengers yearly. The meat consumption includes 330,000 oxen, 2,100,000 sheep, and amounts altogether to 210,000 tons per annum. There are 220 deaths and 360 births daily, being a natural increase of 140 persons, but the increase of population averages 200 daily, the difference being caused by immigration. Of all deaths 21 per cent. occur in hospital, and almost 4 per cent. (3·7) are violent deaths, say 10 daily. There are 5550 coroners' inquests yearly, and 3580 persons killed or wounded by cabs. About 120 adults are missing every year, and 50 dead bodies are not identified. The number of stray dogs taken up is 29,500 per annum. The commerce of London in 1882 was a little over 200 million sterling—that is, imports and exports.

For municipal expenditure, &c., see *Finances*, Table K.

Digitized by Google

LORDS.—The House of Lords comprises 4 princes, 23 dukes, 19 marquises, 139 earls, 32 viscounts, 26 bishops, and 272 barons; in all 515 members.

LOTTERIES.—The Spanish lottery gave a net profit of £403,000 in 1882.

The Italian and Austrian lotteries produced as follows:—

	Italy.		Austria.	
	1868.	1877.	1868.	1877.
Receipts .	£2,420,000	£2,705,000	£1,380,000	£2,172,000
Expenses .	1,670,000	1,713,000	850,000	1,160,000
Profit .	£750,000	£992,000	£530,000	£1,012,000

LUXURIES.

A.—CONSUMPTION IN THE UNITED KINGDOM.

	Quantity, Millions.			Value, Millions £.		
	1860.	1870.	1880.	1860.	1870.	1880.
Wine, gallons .	7	15	16	2·2	4·1	6 0
Tea, lbs. . .	78	120	161	5·9	9·0	8·8
Coffee, „ . .	36	31	32	1·2	0·8	1·3
Sugar, „ . .	957	1,740	2,239	12·4	17·6	22·2
Tobacco, „ . .	36	41	49	1·1	1·6	2·0
Total . . .	...	...	...	22·8	33·1	40·3

B.—RATIO PER INHABITANT.

	Quantity.			Value, Pence.		
	1860.	1870.	1880.	1860.	1870.	1880.
Wine, gallons .	0·25	0·48	0·45	18	32	46
Tea, lbs. . .	2·70	3·80	4·55	48	70	67
Coffee, „ . .	1·25	1·0	0·92	10	6	10
Sugar, „ . .	33·0	55·0	64·0	105	135	155
Tobacco, oz. . .	20·0	21·0	23·0	9	12	15
				190	255	293

Digitized by Google

M

MACHINERY.

1. A sewing-machine does the work of 12 women. The United States export 105,000 of these machines yearly.

2. A Boston "bootmaker" will enable a workman to make 300 pairs of boots daily. In 1880 there were 3100 of these machines working in various countries, turning out 150 million pairs of boots yearly.

3. Glenn's California reaper will cut, thresh, winnow, and put in bags the wheat of 60 acres in 24 hours.

4. The Hercules ditcher, Michigan, removes 750 cubic yards or 700 tons of clay per hour.

5. The Darlington borer enables 1 man to do the work of 7 in making a tunnel, and reduces the cost to one-third of work done by hand; it also permits a week's work to be done in 2 days. See *Tunnels.*

MADDER.—The best is grown near Avignon, on irrigated lands, for which the tenants pay £5 an acre rent. Average crop, 2 tons per acre, worth £50, leaving small profit to the cultivator.

MAIZE.

A.

	Acres.	Million Bushels.	Per Acre.
United States	62,550,000	1,470	23½
Austria	5,400,000	84	16
Italy	4,200,000	85	20
Spain and Portugal	2,000,000	50	25
Canada	700,000	20	30
Australia	200,000	6	30
Total	75,050,000	1,715	23

No crop suffers less from drought, or gives better returns in a suitable climate. The yield in Paraguay and Brazil often reaches 300 for 1.

B.—Maize Crop of United States.

Year.	Million Bushels.	Year.	Million Bushels.
1850	592	1870	761
1860	839	1880	1,755

It is mostly used for fattening pigs.

Digitized by Google

MALT.

A.—Consumption in England, per Annum.

Period.	Million Bushels.	Duty, Pence.	Bushels per Inhab.
1700–20	19·2	6	3·4
1720–50	26·7	6	4·2
1760–80	27·6	9	3·6
1790–1800 . . .	18·0	16	2·1
1810–20	23·7	50	2·2
1830–50	32·7	31	2·1
1850–70	39·8	31	1·9

B.—Consumption in United Kingdom.

	Million Bushels.			Bushels per Inhabitant.		
	1850.	1864.	1881.	1850.	1864.	1881.
England . . .	28·2	38·7	44·4	1·57	1·84	1·71
Scotland . . .	1·0	2·2	2·7	0·34	0·71	0·73
Ireland . . .	1·2	2·7	2·8	0·18	0·49	0·54
U. Kingdom .	30·4	43·6	49·9	1·10	1·45	1·43

MANUFACTURES.

A.—Textiles and Hardware.

	Value, Millions £.			Raw Material, Lbs. per Inhab.		Value of Manufacture per Inhab.
	Textiles.	Hardware.	Total.	Fibre.	Iron.	
U. Kingdom .	195	127	322	71	420	£9·1
France . . .	111	42	153	28	122	4·0
Germany . . .	70	51	121	22	126	2·7
Russia . . .	54	13	67	7	18	0·8
Austria . . .	41	11	52	8	30	1·5
Italy	20	3	23	6	8	0·8
Spain	20	4	24	9	15	1·5
Belgium . . .	21	15	36	54	303	7·0
Holland . . .	5	3	8	19	92	2·0
Switzerland, &c.	13	6	19	8	65	1·5
Europe . . .	550	275	825	19	80	2·7
United States .	122	83	205	24	241	4·0
Total . . .	672	358	1,030	20	104	2·9

Digitized by Google

B.—Textile Manufactures.

	Millions £.					
	Cottons.	Woollens.	Linens, &c.	Silks.	Sundries.	Total.
U. Kingdom .	95	46	21	7	26	195
France . . .	20	43	9	27	12	111
Germany . . .	24	26	5	7	8	70
Russia	18	23	5	2	6	54
Austria . . .	13	11	8	4	5	41
Italy	8	5	1	3	3	20
Spain	9	8	...	1	2	20
United States .	54	43	4	6	15	122
Other countries	13	10	7	4	5	39
The World .	254	215	60	61	82	672

C.—Rise of British Manufactures.

	Value in Millions £.				
	1830.	1850.	1860.	1870.	1881.
Cottons	31	43	78	94	95
Woollens	23	29	38	55	46
Linen, &c. . . .	9	17	17	28	21
Silks	8	10	18	16	7
Sundries	7	10	17	22	26
Textiles . . .	78	109	168	215	195
Hardware . . .	31	42	65	82	127
Total . .	109	151	233	297	322

D.—Consumption of Fibre (United Kingdom).

Year.	Millions of Lbs.						Lbs. per Inhab.
	Cotton.	Wool.	Flax.	Hemp.	Jute.	Total.	
1801 . . .	54	77	48	82	...	261	16
1810 . . .	114	83	60	107	...	364	20
1820 . . .	123	85	87	85	...	380	18
1830 . . .	246	110	138	59	...	553	23
1840 . . .	448	129	210	67	...	854	32
1850 . . .	565	158	249	122	42	1,136	41
1860 . . .	1,140	224	228	78	86	1,756	61
1870 . . .	1,101	309	291	160	324	2,185	68
1880 . . .	1,404	338	227	165	404	2,538	70
1882 . . .	1,519	334	236	181	512	2,780	78

Digitized by Google

E.—Raw Material and Manufactures (U. Kingdom).

Year.	Value in Millions £.						Relative Cost of Raw Material (per cent.)
	Raw Material.			Manufactures.			
	Cotton.	Wool.	Both.	Cottons.	Woollens.	Both.	
1820. .	7	8	15	27	20	47	32
1830. .	7	9	16	32	23	55	30
1840. .	11	10	21	38	27	65	32
1850. .	17	12	29	42	30	72	40
1860. .	31	15	46	79	37	116	39
1870. .	46	18	64	93	55	148	44
1881. .	39	19	58	95	46	141	41

F.—British Manufactures in 1881.

	Value, Millions £.			Shillings per Inhabitant.		
	Production.	Consumption.	Exportation.	Production.	Consumption.	Exportation.
Cottons . .	95	25	70	54	14	40
Woollens . .	46	26	20	26	15	11
Linen, &c. .	21	11	10	12	6	6
Silks . . .	7	4	3	4	2	2
Sundries . .	26	16	10	15	9	6
Textiles .	195	82	113	111	46	65
Hardware .	127	78	49	73	45	28
Total . .	322	160	162	184	91	93

G.—Foreign Customers for British Manufactures.

Exported to	Percentage according to Value.			
	1860.	1870.	1880.	1882.
British colonies . .	32	26	34	35
United States . .	16	14	14	13
European continent .	34	38	35	36
Other countries . .	18	22	17	16
Total	100	100	100	100

For particulars see *Commerce*.

H.—Three Epochs of British Textile Manufactures.

	Thousands.		Raw Fibre, Million Lbs.	Value of Manufacture, Millions £.
	Operatives.	Power-Looms.		
1835 . .	353	116	633	86
1850 . .	596	302	1,136	109
1880 . .	976	725	2,528	195

Digitized by Google

I.—British Manufactures in 1782 and 1882.

	Value (Thousands Omitted).		Ratio.		Shillings per Inhabitant.	
	1782.	1882.	1782.	1882.	1782.	1882.
Cotton goods . .	£960	£95,200	1·7	11·6	2	54
Woollen „ . .	16,800	46,400	29·5	5·5	34	26
Linen „ . .	1,750	11,770	3·1	1·4	3	7
Silk „ . .	3,350	7,230	5·9	0·9	7	4
Leather	10,500	34,030	18·4	4·2	21	19
Iron and steel . .	12,100	127,000	21·4	15·4	24	73
Sundries . . .	11,200	496,670	20·0	61·0	23	282
Total .	£56,660	£818,300	100·0	100·0	114	465

M'Pherson's table for 1782 did not include Ireland.

K.—Manufactures in United States, Value.

Year.	Millions £.	Per Inhab.	Year.	Millions £.	Per Inhab.
1830 . . .	22	£1·8	1860 . . .	377	£12·2
1840 . . .	97	5·7	1870 . . .	846	21·2
1850 . . .	211	9·1	1880 . . .	1,112	22·0

	Millions sterling.				Operatives, Thousands
	Capital.	Wages.	Raw Material.	Product.	
1850 . .	110	49	116	212	957
1860 . .	208	80	214	394	1,311
1870 . .	441	161	510	846	2,054
1880 . .	581	198	708	1,112	2,739

The above includes not only textiles and hardware, but flour-mills, saw-mills, and other industries not counted in Europe.

L.—Principal American Manufactures.

	Value, Millions £.			Per Inhabitant.		
	1860.	1870.	1880.	1860.	1870.	1880.
Flour . . .	52	95	118	£1·6	£2·5	£2·3
Leather and boots .	33	56	73	1·1	1·5	1·4
Lumber . . .	22	77	56	0·7	2·0	1·1
Carpentry . .	18	48	54	0·6	1·2	1·1
Cottons . . .	24	41	54	0·8	1·1	1·0
Woollens . .	13	26	43	0·4	0·7	0·8
Clothing . . .	23	45	56	0·8	1·2	1·1
Machinery . .	12	24	52	0·4	0·7	1·0
Liquor . . .	35	48	29	1·1	1·2	0·6
Sundries . . .	162	386	577	5·2	9·9	11·6
Total .	394	846	1,112	£12·7	£22·0	£22·0

Digitized by Google

M.—Thirty Years of American Manufactures.

State.	Operatives, Thousands.				Wages, Millions £.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
New York .	199	230	351	501	10·2	13·5	29·5	41·4
Pennsylvania	147	222	319	387	7·7	12·5	26·6	27·8
Massachusetts	178	217	279	352	8·8	11·8	24·6	26·6
Ohio . . .	51	76	138	184	2·7	4·6	10·2	12·9
Illinois . . .	12	23	83	145	0·6	1·6	6·4	11·8
New Jersey .	38	56	75	126	1·9	3·3	6·8	9·6
Connecticut .	51	64	90	113	2·5	3·9	8·1	9·1
Other States .	281	423	719	931	14·6	28·8	48·8	58·8
Total . .	957	1,311	2,054	2,739	49·0	80·0	161·0	198·0

Millions £ Sterling.

State.	Capital.				Product.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
New York .	21	35	77	107	50	79	157	224
Pennsylvania	20	39	85	99	32	60	143	155
Massachusetts	18	28	48	64	33	53	111	131
Ohio . . .	6	12	29	40	13	25	54	73
Illinois . . .	1	6	20	29	3	12	41	86
New Jersey .	5	8	16	22	8	15	34	53
Connecticut .	5	9	20	25	10	17	32	39
Missouri . .	2	4	16	15	5	9	41	34
Michigan . .	1	5	15	19	2	7	24	31
California . .	1	4	8	12	3	14	13	24
Other States .	30	58	107	149	53	103	196	262
Total . .	110	208	441	581	212	394	846	1,112

Ratio per Operative.

State.	Wages, £.				Product, £.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
New York .	51	59	82	83	250	340	440	448
Pennsylvania	52	56	83	72	220	267	444	400
Massachusetts	49	54	88	76	180	240	400	370
Ohio . . .	54	61	74	70	255	334	380	395
Illinois . . .	50	70	77	80	250	500	490	593
New Jersey .	50	59	90	76	210	270	450	420
Connecticut .	49	61	90	81	196	270	350	344
Other States .	52	68	68	63	225	316	382	374
Gen. average .	51	61	79	72	220	300	415	403

Digitized by Google

N.—American Manufactures in Groups of States.

State.	Operatives, Thousands.				Wages, Millions £.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
New England .	313	390	526	645	16	22	44	48
Middle . .	418	542	801	1,102	21	31	67	83
Southern . .	104	126	187	228	4	7	9	11
Western . .	108	184	499	669	6	12	38	50
Pacific . .	14	69	41	95	2	8	3	6
Total .	957	1,311	2,054	2,739	49	80	161	198

Millions £ sterling.

State.	Capital.				Product.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
New England .	34	54	102	130	59	98	201	230
Middle . .	49	89	187	243	98	166	354	460
Southern . .	13	23	29	40	20	39	57	70
Western . .	13	35	109	150	30	71	217	326
Pacific . .	1	7	14	18	5	20	17	26
Total .	110	208	441	581	212	394	846	1,112

Ratio per Operative.

State.	Wages.				Product.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
New England .	£51	£56	£84	£75	£190	£252	£390	£360
Middle . .	50	57	84	73	230	306	440	420
Southern . .	40	55	48	48	192	303	305	310
Western . .	55	65	76	75	275	390	434	490
Pacific . .	140	120	75	63	360	290	420	275
Union. . .	51	61	79	72	220	300	415	463

MANURE.

A.—Annual Production per Animal.

Cow . . .	6 tons.	Pig . . .	30 cwt.
Horse . . .	5 „	Sheep . . .	14 „
Ass . . .	2 „	Goat . . .	10 „

Digitized by Google

B.—Production in Countries.

	Million Tons.	Tons per Arable Acre.
United Kingdom	103	2·2
France	112	1·7
Germany	132	2·0
Russia	273	1·4
Austria	116	2·1
Italy	31	1·1
Spain	42	1·9
Portugal	7	1·8
Holland	11	2·2
Belgium	10	2·0
Denmark	11	1·9
Sweden and Norway	24	1·6
Europe	872	1·8

The above forms the chief ingredient in farm-yard manure, being mixed with straw, &c. The quantity of farm-yard manure used per acre is 13 tons in Great Britain, 45 in Belgium, 14 on the estates of Russian nobles, and 7 on the lands of Moujiks or peasant-farmers in Russia. In France fish is often used. In Norfolk likewise the farmers buy fish at 16 shillings per ton, mix it with mould as 1 to 40, and obtain heavy crops of turnips.

MARBLE.—Is worth about £4 per ton, Italy exporting annually 105,000 tons, valued at £400,000. It is 7 per cent. heavier than stone, and 5 per cent. lighter than granite. One cubic foot weighs 160 lbs., that is, 14 cubic feet per ton.

MARMALADE.—Dundee consumes 6000 chests of bitter oranges yearly, and exports 3 million pounds of marmalade.

MARRIAGES.

A.—Number per 1000 Inhabitants per Annum.

	1861-70.	1871-80.	20 yrs.		1861-70.	1871-80.	20 yrs.
U. Kingdom	7·66	7·60	7·63	Austria	8·65	8·55	8·60
France	7·95	7·95	7·95	Hungary	10·50	10·30	10·40
Germany	8·85	8·85	8·85	Switzerland	7·65	7·65	7·65
Holland	8·15	8·05	8·10	Italy	7·55	7·65	7·60
Belgium	7·40	7·20	7·30	Spain	7·55	7·55	7·55
Denmark	7·60	7·80	7·70	Australia	8·00	7·00	7·50
Sweden	6·80	6·80	6·80				

The ratio of persons marrying will be of course double the above, each marriage being here counted singly. Wherever no rates exist previous to 1870 the same is supposed as in the ensuing decade.

Digitized by Google

B.—Conditions of Persons Marrying, in Ratio.

	Husband.			Wife.		
	Bachelor.	Widower.	Total.	Spinster.	Widow.	Total.
England . .	861	139	1000	902	98	1000
France . . .	881	119	1000	922	78	1000
Prussia . .	847	153	1000	902	98	1000
Russia . . .	808	192	1000	864	136	1000
Austria . .	819	181	1000	886	114	1000
Italy . . .	863	137	1000	924	76	1000
Spain . . .	851	149	1000	912	88	1000
Belgium . .	878	122	1000	913	87	1000
Holland . .	848	152	1000	898	102	1000
Denmark . .	865	135	1000	914	86	1000
Sweden . .	883	117	1000	940	60	1000
Norway . .	883	117	1000	941	59	1000
Greece . . .	899	101	1000	926	74	1000
Roumania .	880	120	1000	912	88	1000

C.—Classification of 1000 Marriages, and Birth-Rate.

	Bachelor with		Widower with		Total.	Children per Marriage.
	Spinster.	Widow.	Spinster.	Widow.		
England . . .	816	45	86	53	1000	4·16
France . . .	840	41	82	37	1000	2·98
Prussia . . .	794	53	108	45	1000	4.12
Russia . . .	762	46	102	90	1000	4·85
Austria . . .	755	64	131	50	1000	4·04
Italy	825	38	99	38	1000	4·49
Spain	811	40	101	48	1000	4·66
Belgium . . .	827	51	86	36	1000	4·21
Holland . . .	794	54	104	48	1000	4·34
Denmark . . .	813	52	101	34	1000	3·55
Sweden . . .	847	36	93	24	1000	4·01
Norway . . .	845	38	96	21	1000	3·85
Greece . . .	858	41	68	33	1000	...
Roumania . .	850	30	62	58	1000	...

D.—Ratio of Second Marriages.

	Per Cent.		Per Cent.		Per Cent.
England . . .	12	Austria . .	18	Holland . .	12
Ireland . . .	9	Italy . . .	10	Denmark . .	10
France . . .	10	Spain . . .	9	Swed. & Nor.	9
Germany . . .	11	Switzerland .	13	Greece . . .	9
Russia . . .	16	Belgium . .	10	Roumania . .	11

Digitized by Google

E.—Marrying Age, 1000 Men.

	Under 20.	20–30.	30–40.	40–50.	Over 50.	Total.	Medium Age, Years.
England .	35	731	144	52	38	1000	27·7
Scotland .	32	684	189	62	33	1000	28·6
Ireland .	26	600	269	67	38	1000	29·9
France. .	23	607	262	65	43	1000	30·2
Italy . .	11	623	259	68	39	1000	30·2
Prussia .	8	663	231	64	34	1000	29·2
Russia .	373	428	122	56	21	1000	25·2
Norway .	8	572	291	83	46	1000	31·1
Sweden .	1	574	299	81	45	1000	31·1
Belgium .	9	548	307	91	45	1000	31·3
Holland .	23	562	281	87	47	1000	30·9
Jews . .	22	664	174	74	66	1000	30·1
			Women.				
England .	149	680	111	41	19	1000	25·5
Scotland .	134	686	134	37	9	1000	25·7
Ireland .	137	713	111	27	12	1000	25·2
France. .	204	593	145	40	18	1000	24·9
Italy . .	171	657	125	34	13	1000	25·4
Prussia .	111	686	152	41	10	1000	26·0
Russia . .	573	334	64	23	6	1000	21·5
Norway .	93	657	185	53	12	1000	27·1
Sweden .	51	643	232	59	15	1000	28·3
Belgium .	63	625	222	66	24	1000	28·5
Holland .	99	607	212	61	21	1000	28·0
Jews . .	235	585	98	54	28	1000	26·2

F.—Married and Unmarried Population, Ratio.

	Unmarried.	Married.	Widowed.	Total.
England . .	602	345	53	1000
France . . .	511	405	84	1000
Prussia . . .	606	336	58	1000
Wurtemburg . .	623	319	58	1000
Austria . . .	605	342	53	1000
Hungary . .	532	407	61	1000
Italy . . .	582	352	66	1000
Switzerland . .	609	319	72	1000
Spain . . .	572	360	68	1000
Portugal . .	628	310	62	1000
Holland . .	611	328	61	1000
Belgium . .	629	315	56	1000
Scandinavia . .	618	330	52	1000
Chile . . .	688	260	52	1000

Digitized by Google

G.—Women of Child-bearing Age (15 to 45) in 1875.

	Thousands.			Ratio.		
	Married.	Unmarried.	Total.	Married.	Unmarried.	Total.
England . .	2,685	2,724	5,409	496	504	1000
Scotland . .	340	427	767	444	556	1000
Ireland . .	470	703	1,173	401	599	1000
France . . .	4,359	3,846	8,205	531	469	1000
Germany . .	4,380	5,082	9,462	463	537	1000
Switzerland .	266	367	633	421	579	1000
Italy . . .	3,224	2,977	6,201	520	480	1000
Belgium . .	474	684	1,158	409	591	1000
Holland . .	369	472	841	439	561	1000
Denmark . .	188	228	416	450	550	1000
Sweden . .	405	559	964	420	580	1000
Norway . .	175	226	401	437	563	1000

H.—Marriages in United Kingdom.

	Marriages, Thousands.		Annual Ratio per 1000 Inhabitants.	
	1861–70.	1871–80.	1861–70.	1871–80.
England	1,770	1,960	8·43	8·17
Scotland	224	253	7·12	7·23
Ireland	290	251	5·14	4·74
United Kingdom .	2,284	2,464	7·66	7·60

See note to Table A, page 303.

I.—Consanguineous Marriages.

France . .	1½ per cent.	England . .	2 per cent.
London . .	1½ „	English nobility	4½ „

The nature of these marriages in France is as follows :—Cousins, 75 ; brother-in-law, 20 ; uncle and niece, 4 ; aunt and nephew, 1 per cent.

In all countries about 5 per cent. of marriages prove barren, the tendency being greatest among consanguineous marriages. Among the English nobility, for example, 19 per cent. are childless. Married women live 2 years longer than single ones, although 1 in 70 dies in childbirth, since 3 births in 1000 cost the mother's life.

K.—Duration of Marriage.

	Years.		Years.		Years.
England . . .	27	Russia . . .	30	Holland . . .	23
France	26	Norway . . .	24	Belgium . . .	23
Germany . . .	26	Sweden . . .	23	Jews	25

Digitized by Google

In England, if the mother die first, the father survives 9½ years; but if the father die first, the mother survives 11½ years. In the Census of 1871 the married people living had an average age of 41¾ years, and had been married 15 years.

L.—Ratio of Married Persons in United Kingdom (1871).

	England.		Scotland.		Ireland.		U. Kingdom.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Married . .	35·1	33·9	30·7	28·8	29·5	28·4	33·6	32·6
Unmarried .	61·3	58·6	66·0	62·8	66·8	62·1	62·8	59·4
Widowed .	3·6	7·5	3·3	8·4	3·7	9·5	3·6	8·0
Total . .	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

M.—Variations of Condition in England.

	Males.			Females.		
	1851.	1861.	1871.	1851.	1861.	1871.
Married . . .	33·7	35·0	35·1	32·9	33·9	33·9
Unmarried . .	62·6	61·3	61·3	59·8	58·8	58·6
Widowed . .	3·7	3·7	3·6	7·3	7·3	7·5
Total . . .	100·0	100·0	100·0	100·0	100·0	100·0

N.—Variations in Scotland.

	Males.			Females.		
	1851.	1861.	1871.	1851.	1861.	1871.
Married . . .	29·9	30·9	30·7	27·8	28·6	28·8
Unmarried . .	66·8	65·8	66·0	63·8	63·0	62·8
Widowed . .	3·3	3·3	3·3	8·4	8·4	8·4
Total . . .	100·0	100·0	100·0	100·0	100·0	100·0

O.—Variations in Ireland.

	Males.		Females.	
	1871.	1881.	1871.	1881.
Married	29·5	27·6	28·4	27·0
Unmarried . . .	66·8	68·5	62·1	63·4
Widowed . . .	3·7	3·9	9·5	9·6
Total .	100·0	100·0	100·0	100·0

Digitized by Google

P.—Variations in France since 1806.

	Per 1000 Inhab.			Per 1000 Inhab.	
	Unmarried.	Married.		Unmarried.	Married.
1806 . .	641	359	1851 . .	611	389
1821 . .	630	370	1861 . .	600	400
1841 . .	622	378	1876 . .	595	405

In this table widowed persons are included among unmarried.

Q.—Marriages in Months and Seasons.

	Scotland.	France.		Scotland.	France.
January . .	160	126	July	124	89
February . .	70	125	August . . .	73	91
March . . .	71	55	September . .	74	91
April . . .	78	127	October . .	74	98
May . . .	49	91	November . .	114	120
June . . .	174	112	December . .	139	75
½ year .	602	636	½ year .	598	564

Quarter ending	England.	Scotland.	Ireland.	France.
March . . .	246	301	432	306
June . . .	302	301	247	330
September . .	294	271	252	271
December . .	358	327	269	293
Total .	1,200	1,200	1,200	1,200

MEAT.

A.—Production and Consumption.

	Production, Thousands of Tons.					Consumption, Tons, Thousands.
	Beef.	Mutton.	Pork.	Fowl, &c.	Total.	
United Kingdom	666	346	145	38	1,195	1,640
France . . .	550	210	240	60	1,060	1,210
Germany . . .	785	230	285	45	1,345	1,405
Russia	1,050	420	445	50	1,965	1,920
Austria . . .	655	180	275	40	1,150	1,090
Italy	165	70	55	25	315	295
Spain and Port. .	170	180	130	10	490	460
Belgium . . .	82	6	24	6	118	190
Holland . . .	95	9	12	5	121	98
Denmark . . .	80	18	16	2	116	76
Swed. and Nor. .	150	27	18	6	201	196
Greece	12	15	1	1	29	31
Roumania, &c. .	160	50	60	10	280	300
Europe . . .	4,620	1,761	1,706	298	8,385	8,911
United States .	1,750	340	1,420	60	3,570	3,060
Canada . . .	135	36	45	5	221	198
Total . .	6,505	2,137	3,171	363	12,176	12,169

Digitized by Google

The flocks and herds of the River Plate and Australia are capable of yielding a large meat crop, but at present the sheep are grown only for wool, and cattle are in some seasons slaughtered for their hides. If the available supply be taken at 67 per cent. of what the same number would give in Europe, the meat crop annually of those countries would be :—

	River Plate.	Australia.	Total.
Beef, tons .	650,000	310,000	960,000
Mutton „ .	520,000	450,000	970,000
Pork „ .	11,000	24,000	35,000
Total .	1,181,000	784,000	1,965,000

B.—MEAT CONSUMPTION PER INHABITANT.

	Per Annum, Lbs.				
	Beef.	Mutton.	Pork.	Fowl, &c.	Total.
United Kingdom	52	24	26	3	105
France	40	12	19	3	74
Germany	40	12	15	2	69
Russia	24	11	11	2	48
Austria	37	10	15	2	64
Italy	12	5	4	2	23
Spain and Portugal	16	18	14	1	49
Belgium	44	3	27	2	76
Holland	42	5	7	2	56
Denmark	31	19	17	2	69
Sweden and Norway	48	9	6	2	65
Europe	32	12	11	2	57
United States	62	14	41	3	120
Canada	52	17	21	3	93

C.—MEAT-SUPPLY OF THE UNITED KINGDOM.

Years.	Annual Slaughter, Thousands.			Meat Crop, Thousands Tons.	Consumption.	
	Cows.	Sheep.	Pigs.		Thousands Tons.	Lbs. per Inhab.
1835–40	1,328	8,670	1,552	778	778	66
1841–50	1,418	10,780	1,595	880	880	72
1851–60	1,572	12,430	1,880	990	1,034	81
1861–70	1,790	13,672	2,043	1,106	1,237	91
1871–80	1,948	12,968	2,062	1,160	1,448	96
1881–82	1,994	12,466	2,080	1,195	1,640	105

Digitized by Google

D.—Expenditure for Meat in United Kingdom.

Years.	Millions £ sterling.		Relative Expenditure for Meat.	London Price per 8 Lbs.	Meat Expenditure per Inhab.
	National Earnings.	Meat Value.			
			Per Cent.	Pence.	Shillings.
1835–40 . .	480	43	9	51	33
1841–50 . .	550	45	8	48	33
1851–60 . .	690	58	8½	52	41
1861–70 . .	880	76	8½	56	50
1871–80 . .	1,123	112	10	68	66
1881–82 . .	1,230	139	11½	72	78

The total meat-crop of nations, at an average of £55 per ton, represents a value of 660 millions sterling, or 36 shillings for each consumer, big and little, per annum. The average in the United Kingdom, as shown above, is more than double.

E.—Meat Imports into United Kingdom.

	Tons, Thousands.			Lbs. per Inhabitant.		
	1861.	1871.	1881.	1861.	1871.	1881.
Bacon . . .	26	55	231	2	4	15
Beef . . .	8	30	91	½	2	6
Cattle . . .	35	85	104	3	6	6¾
Pork . . .	7	15	19	½	1	1½
Total .	76	185	445	6	13	29

Imported cattle are taken at 560 lbs. for beasts and 56 lbs. for sheep.

F.—Meat Exports of United States.

	Tons.		
	1861.	1871.	1881.
Bacon . . .	22,400	32,300	336,400
Beef . . .	6,400	19,800	68,100
Cattle . . .	3,300	11,900	56,200
Pork . . .	8,300	18,100	49,500
Total .	40,400	82,100	510,200

See note at foot of preceding table.

Digitized by Google

G.—Meat Consumption in France.

	Tons.			Per Inhabitant, Lbs.		
	1840.	1860.	1880.	1840.	1860.	1880.
Beef . . .	299,000	450,000	640,000	19	27	40
Mutton . .	82,000	114,000	210,000	5	7	12
Pork . . .	290,000	378,000	305,000	19	23	19
Total .	671,000	942,000	1,155,000	43	57	71

H.—Loss of Meat in Cooking.

100 lbs. raw beef	= 67 lbs. roast	100 lbs. raw fowl	= 80 roast
100 „ „	= 74 „ boiled	100 „ „	= 87 boiled
100 „ raw mutton	= 75 „ roast	100 „ raw fish	= 94 boiled

MERCURY.

	Tons, Production.		Tons, Consumption.
California . .	1,380	Great Britain . .	1,550
Spain . . .	1,090	United States . .	570
Austria . . .	275	China . . .	500
Other countries .	595	Other countries .	720
Total .	3,340	Total .	3,340

Mercury is worth about £220 per ton.

METALS.

A.

	Conductors of			Conductors of	
	Heat.	Electricity.		Heat.	Electricity.
Gold . .	100	94	Iron . .	37	16
Platinum .	98	16	Zinc . .	36	29
Silver . .	97	74	Tin . .	30	15
Copper .	90	100	Lead . .	18	8

B.—Tenacity.

A wire, 0·84 of a line in diameter, will sustain the following weights:—

Lead . . .	28 lbs.	Silver . . .	187 lbs.
Tin	35 „	Platinum . . .	274 „
Zinc	110 „	Copper . . .	302 „
Gold	150 „	Iron	549 „

C.—Fluid Density.

Zinc	6·48	Copper . . .	8·22
Iron	6·88	Silver . . .	9·51
Tin	7·03	Lead	10·37

For general statistics, see *Mining;* for particular, see each metal under its own title.

Digitized by Google

METEOROLOGY.

A.—Temperature of Various Places (Fahr.)

Those places marked with an asterisk show highest and lowest Quarters, instead of highest and lowest Months.

	Highest Month.	Lowest Month.	Year's Average.
Aberdeen	60·5	37·8	49·2
Adelaide	84·4	54·2	68·4
*Alaska	53·1	31·3	42·1
*Albany	70·4	25·3	47·9
Algiers	76·5	53·0	64·3
Amsterdam	65·3	33·2	49·9
*Antigua	81·7	77·4	79 4
Archangel	60·8	6·6	33·5
*Arizona	85·5	46·9	67·4
*Arkansas	81·6	44·2	62·1
*Aspinwall	79·7	78·7	79·1
Astrakan	77·6	12·6	50·1
Auckland	70·0	51·0	60·0
Azores	70·0	55·6	62·4
Bagdad	94·1	44·6	73·7
*Bahamas	84·5	74·7	79·6
Baltimore	75·2	30·9	54·9
Barbadoes	80·6	76·1	78·4
Barcelona	78·8	48·7	63·0
Batavia	80·0	75·0	78·3
Belfast	64·2	40·0	52·1
Berlin	65·8	27·7	48·2
Bermudas	76·8	56·8	67·4
Bogota	61·9	57·6	59·7
Bombay	85·9	76·3	81·3
Bordeaux	73·2	41·0	57·0
Boston	72·0	26·6	48·5
Boulogne	69·1	37·1	54·4
Bremen	64·6	29·6	48·1
Breslau	65·3	27·9	46·7
Bristol	67·0	36·0	51·7
Brussels	64·4	35·3	50·7
Bucharest	68·2	20·3	46·4
Buda-Pesth	66·6	25·1	47·5
*Buenos Ayres	73·4	52·6	62·8
*Buffalo	67·7	26·6	46·9
Cadiz	72·9	51·4	62·1
Cairo	85·8	56·1	72·2
Calcutta	90·4	69·3	82·4
Canton	83·0	52·5	69·9
Cape Town	76·0	57·6	66·5
Caracas	73·3	68·0	71·1
Carlsbad	64·0	26·3	46·0
Chambery	68·7	30·9	51·5
*Charleston	79·6	51·5	65·5
Cheltenham	66·3	38·3	51·5
*Chicago	66·8	24·8	45·9
Cincinnati	75·6	31·6	54·7
Coblenz	68·4	32·7	51·5
Colombo	84·3	77·9	80·8
*Colorado	64·4	20·6	42·9
*Concord	67·5	22·8	45·7
Constant'ople	74·1	39·2	56·5
Copenhagen	64·3	29·3	46·6
*Costa Rica	71·7	67·9	69·3
Cracow	67·0	23·9	47·1
Christiania	61·3	20·8	41·5
*Dakota	74·6	7·9	43·6
*Delaware	75·2	34·2	54·7
Demerara	83·0	76·5	80·7
*Detroit	68·1	26·6	47·2
Dresden	67·5	29·2	49·1
Drontheim	65·0	19·6	40·1
Dublin	61·5	39·3	50·1
*Dubuque	71·7	22·6	47·7
Edinburgh	58·7	37·4	47·1
Falkland I.	56·0	37·4	47·2
Falmouth	58·9	40·5	50·3
Faroe I.	55·9	36·9	45·4
Florence	76·9	41·2	59·2
*Florida	83·4	54·4	71·0
Frankfort	66·1	31·5	49·6
*Galveston	83·7	53·5	69·4
Geneva	71·8	31·1	52·7
Genoa	77·4	46·7	61·1
Ghent	67·6	33·8	50·9
Gibraltar	79·5	57·6	67·4
Glasgow	61·3	38·2	49 8
*Greenland	40·6	14·1	26·8
*Guadeloupe	81·3	76·3	79·1
Guatemala	71·3	63·8	66·6
Halifax	70·0	18·0	40·1
Hamburg	64·6	30·0	48·0
Hammerfest	53·0	22·0	37·0
*Hartford	69·8	29·9	49·8
Havanna	83·9	71·4	77·2
Hobart	63·1	40·2	52·4
*Honduras	83·2	76·0	80·0
Honolulu	78·8	70·5	74·9
Iceland	56·2	28·3	39·4
*Idaho	75·0	29·8	52·5
*Indiana	76·4	28·7	53·1

Digitized by Google

METEOROLOGY—*continued.*

	Highest Month.	Lowest Month.	Year's Average.
*Iowa	75·5	22·1	48·9
Irkutsk	64·9	1·2	32·6
Isle of Man	60·3	40·5	49·8
Isle of Wight	65·0	37·0	50·4
Jamaica	81·7	75·7	78·8
Jersey	62·9	41·7	51·9
Jerusalem	77·3	47·4	62·6
*Kansas	75·8	28·7	52·7
Kazan	64·8	3·5	35·5
*Kentucky	75·6	32·4	54·1
*Key West	83·4	70·4	77·1
Leipsic	62·1	29·7	46·4
Lima	80·1	66·2	73·3
Lisbon	72·1	51·4	61·4
Liverpool	62·0	39·9	50·8
London	64·1	37·3	50·8
Madeira	73·9	63·1	67·6
Madras	88·2	75·2	81·9
Madrid	79·0	42·4	58·2
Malta	78·0	57·1	67·5
Manchester	60·8	36·7	48·8
Manilla	87·0	68·0	78·4
Marseilles	75·9	43·2	58·3
*Matamoras	84·9	64·3	75·5
Mauritius	82·5	72·5	77·1
Melbourne	66·8	47·9	57·0
*Memphis, Tenn.	79·5	42·1	60·7
Messina	74·7	54·2	65·7
Mexico	66·2	52·1	60·6
Milan	74·7	33·2	55·1
*Milwaukee	67·0	24·0	45·8
*Minnesota	71·1	12·9	42·8
Minorca	79·2	53·3	64·7
*Mobile	79·0	52·4	66·1
*Montana	70·3	19·2	44·8
Montevideo	80·0	56·0	66·8
Montpellier	78·4	42·1	59·5
Montreal	73·6	14·0	44·6
Moscow	66·4	13·6	40·0
Munich	64·7	29·6	48·4
Nancy	63·5	33·3	49·5
Naples	76·3	46·2	60·3
*Nashville	76·3	39·7	58·3
Natal	71·8	55·2	64·7
*Nevada	75·2	34·6	54·1
*Newark, N.J.	70·4	30·8	50·5
*N. Brunswick	57·6	21·1	40·1
*New Mexico	80·1	30·3	55·4
New Orleans	82·2	52·3	69·1
New York	73·1	31·6	51·8
Nice	73·9	44·5	58·9
*Omaha	74·3	23·4	49·3
*Oregon	67·7	39·4	51·6
Palermo	76·4	51·3	63·1
Paris	65·7	35·4	51·3
Pekin	76·3	24·7	53·3
Penzance	62·1	42·6	51·8
Philadelphia	73·9	29·4	52·1
*Portland, U.S.	63·7	21·7	43·0
*Porto Rico	86·9	78·1	81·4
Prague	69·6	27·6	50·2
*Prince Ed. I.	65·8	23·3	43·9
*Providence	68·0	27·4	47·9
Quebec	73·4	12·7	40·0
Quito	63·5	58·2	60·9
*Raleigh	77·2	40·1	58·5
Richmond	77·6	33·7	56·2
Rio Janeiro	82·4	67·2	77·2
Rome	76·0	45·0	60·5
Rotterdam	66·2	35·7	51·0
St. Bernard, M.	44·2	16·4	30·2
*St. John's	57·5	25·1	41·2
St. Louis	78·1	32·9	55·0
St. Petersburg	63·9	14·7	39·6
St. Thomas	83·7	78·2	81·2
St. Domingo	86·0	77·0	81·3
*San Francisco	58·1	50·1	55·2
Savannah	82·2	50·5	66·7
Sebastopol	71·2	34·3	53·0
Sierra Leone	81·6	77·0	79·3
Singapore	82·2	78·5	80·7
Stockholm	63·5	24·3	42·3
Strasburg	65·8	31·0	49·7
Stuttgart	66·2	30·0	49·5
Sydney	66·3	55·3	65·8
Teneriffe	78·9	63·8	71·2
*Texas	83·7	51·2	68·5
Toronto	66·7	23·7	44·8
Trieste	72·6	38·3	55·3
Trinidad	79·5	76·5	78·0
Tunis	86·5	53·1	68·8
Turin	73·2	30·9	53·1
*Utah	78·6	30·4	51·9
Venice	75·1	35·3	55·4
Vera Cruz	82·4	70·0	77·0
*Vermont	67·2	21·0	43·8
Vienna	70·8	29·3	51·0
Warsaw	64·6	22·3	44·2
Washington	78·5	36·1	56·2
Wisconsin	70·4	18·6	45·2
Wyoming	72·6	20·8	45·4
York	63·5	33·4	49·2

Digitized by Google

B.—Temperature of Great Britain.

Months.	Greenwich. 1771–1841.	Greenwich. 1842–79.	Greenwich. Rise.	Scotland, 1855–64.
January	35·5	38·7	3·2	37·2
February	38·3	39·4	1·1	37·4
March	40·8	41·6	0·8	39·8
April	45·5	47·2	1·7	44·1
May	52·4	52·7	0·3	49·5
June	57·8	59·0	1·2	55·6
July	61·3	62·2	0·9	57·6
August	60·6	61·5	0·9	57·3
September	56·2	57·1	0·9	52·8
October	49·3	50·2	0·9	47·2
November	41·6	43·5	1·9	40·2
December	38·6	40·0	1·4	38·6
Annual mean	48·1	49·4	1·3	46·7

This rise of temperature in England has been coincident with a diminution of frost in Canada and Labrador. See *Frost, Cold, Heat, Rainfall, Barometer*, &c.

C.—Extraordinary Readings, in Fahrenheit.

London, July 15th, 1881	95·6	Bombay, July, 1883	96·3
Paris, „ „ „	99·8	Adelaide, Jan. 1880	114·6
Naples „ 25th, „	96·2	London, Jan. 15th, 1881	9·8

MILITARY PAY.

A.—Middle Ages, Daily Pay.

	Old Money, Groats.	Present Value.				Old Money, Groats.	Present Value.		
Count	40	£2	2	0	Man-at-arms	3	£0	3	0
Baron	20	1	1	0	Cross-bowman	1	0	1	0
Knight	12	0	13	0	Archer	½	0	0	6

B.—Pay in European Armies, per Annum.

	English.	French.	Italian.		English.	French.	Italian.
General	...	£660	£600	Lieut.	£118	£80	£90
Colonel	£1,000	280	280	Ensign	100	52	...
Lieut.-Col.	320	220	210	Sergeant	36	15	...
Major	292	180	170	Private	18	5	...
Captain	212	120	120				

MILITIA.—That of the United Kingdom numbers 118,000 men. Death rate, 3·3 per 1000. In the year 1880 there were 7949 drafted into the army, 13,665 discharged or invalided, 985 expelled, and 9299 who deserted.

Digitized by Google

MILK.

A.—Supply and Consumption, per Annum.

	Milch Cows.		Milk, Million Gallons.			Value, Millions £.	Per Inhab., Shillings.
	Number, Thousands.	Per 100 Inhab.	Used as Milk.	Butter, &c.	Total.		
U. Kingdom	3,750	11	700	800	1,500	40	22
U. States .	12,440	24	2,300	2,500	4,800	73	29
Canada . .	970	22	130	270	400	7	31
Holland . .	540	14	50	280	330	9	44
France . .	4,300	12	850	600	1,450	23	12
Germany .	5,900	13	840	1,170	2,010	32	14

B.—Components of Milk.

	Water.	Fat.	Caseine.	Sugar.	Total.
Woman . .	89·3	2·5	3·4	4·8	100·0
Cow . .	86·0	4·0	7·2	2·8	100·0
Ass . .	90.9	1·1	1·9	6·1	100·0
Goat . .	86·8	3·3	4·0	5·9	100·0
Ewe . .	85·6	4·2	4·5	5·7	100·0

MILLIONAIRES, PAST AND PRESENT.

Name.	Residence.	Supposed Fortune.	Profession.
Seneca . . .	Rome . .	£3,400,000	Philosopher.
Lentulus . . .	„ . .	2,500,000	Astrologer.
Lucullus . . .	„ . .	1,600,000	Gentleman.
Sir F. Goldsmid .	London . .	10,000,000	Banker.
John Jacob Astor .	New York .	6,000,000	Furrier.
Patrick Milmo . .	Mexico . .	2,000,000	Grazier.
A. T. Stewart . .	New York .	16,000,000	Haberdasher.
M. Mackay . .	California .	18,000,000	Miner.
Thomas Brassey .	London . .	5,500,000	Engineer.
Baron Rothschild .	„ . .	3,000,000	Banker.
Louis Philippe . .	Paris . .	2,600,000	King.
Jay Gould . .	New York .	20,800,000	Broker.
W. Vanderbilt . .	„ .	36,400,000	Railway director.
Heinrich Drasche .	Vienna . .	2,100,000	Potter.
Thomas Holloway .	London . .	2,200,000	Druggist.
Joseph Love . .	Durham .	2,300,000	Collier.
F. Borsig . . .	Berlin . .	3,100,000	Engine-builder.
W. Wythes . .	London . .	3,600,000	Contractor.
H. Krupp . . .	Essen . .	2,700,000	Ironmaster.
John Fair . .	California .	3,200,000	Miner.
W. Barron . .	Mexico . .	1,500,000	Merchant.
J. Lambert . .	Chile . .	2,600,000	Miner.
John Jackson . .	Montevideo .	1,200,000	Shepherd.

Digitized by Google

MINERAL SPRINGS.

A.—Temperature, Fahrenheit.

Bilin	66	Thermopylæ	113	Ischia	140
St. Didier	70	Vichy	113	Ofen	144
Mallow	72	Bath	115	Arles	145
Bristol	74	Gastein	117	Baden-Baden	147
Yverdun	76	Bigorre	119	Plombières	147
Buxton	82	Toeplitz	121	Viseu	153
Kreuznach	86	Lucca	124	Wisbaden	158
Patras	97	Cauterets	130	Balkan	163
Wildbad	98	Ems	131	Acqui	167
Pfeffers	101	Aachen	135	Carlsbad	167
Alicante	104	Guimaraens	138	Chaudes Aigues	174
Pisa	106	Luchon	140	Baths of Nero	182

B.—Result of French Mineral Waters.

	Barèges.	Amelie.	Vichy.	Bourbonne.	General Average.
Cured	12	9	22	16	15
Improved	52	45	61	62	55
No effect	33	36	14	17	25
Worse	3	10	3	5	5
Total	100	100	100	100	100

MINING.

A.—Value of Minerals.

	Millions £.					No. of Miners, Thousands Omitted.	Result per Man.
	Gold.	Silver.	Coal.	Sundries.	Total.		
U. Kingdom	...	...	67	12	79	538	£146
France	...	...	11	3	14	206	70
Germany	...	1	14	4	19	231	82
Russia	6	...	3	1	10	207	48
Austria	...	½	4½	3	8	92	86
Italy	...	...	...	2	2	36	52
Spain	...	...	...	6	6	70	86
Belgium	...	...	6	½	6½	105	62
Sweden	...	...	...	1	1	29	35
Europe	6	1½	105½	32½	124½	1,514	82
United States	7	8	28	34	77	560	140
Span. America	1	5	½	3½	10	150	66
Australia	5	...	1	2	8	95	84
Other Countries	1	½	1	1	3½	70	50
The World	20	15	136	72	223	2,389	90

Digitized by Google

B.—Deepest Mines in Working.

Mine.	Country.	Mineral.	Depth, Feet.
Lambert.	Belgium.	Coal.	3,490
Birkenberg.	Austria.	Silver.	3,280
Zwickau.	Saxony.	Coal.	2,637
St. Andre.	Prussia.	Silver.	2,532
Rosebridge.	England.	Coal.	2,510
Dukinfield.	,,	,,	2,448
Magdala.	Australia.	Gold.	1,990
Chaumont.	France.	Coal.	1,876
Kongsberg.	Norway.	Silver.	1,869
Schemnitz.	Hungary.	,,	1,771
La Huerta.	Spain.	,,	1,548

C.—Deaths of Miners in Great Britain.

Year.	Killed.	Per 10,000 Miners.	One Killed in	Tons Raised per Miner Killed.
1851–60 . .	10,018	41	245	57,000
1861–70 . .	10,626	33	300	104,000
1871–80 . .	11,349	23	425	140,000
1881 . . .	1,053	19	519	170,000

D.—Progress of British Mining.

Year.	Tons Raised.	Value.	Tons per 100 Inhab.	Mineral Value per Inhab.
1800 . .	10,850,000	£6,100,000	70	£0 8 0
1810 . .	13,000,000	7,800,000	75	0 9 0
1820 . .	15,700,000	10,400,000	80	0 10 0
1830 . .	20,300,000	13,700,000	84	0 11 6
1840 . .	34,600,000	16,200,000	130	0 12 6
1850 . .	55,500,000	23,100,000	202	0 16 6
1860 . .	96,000,000	32,600,000	330	1 2 6
1870 . .	127,000,000	40,300,000	402	1 6 0
1882 . .	178,000,000	79,400,000	503	1 13 0

Miners' wages in England averaged 30 shillings a week in the 10 years ending 1880: they reached 51 shillings in 1873, and fell to 20 shillings in 1878.

See *Coal, Copper, Iron, Lead,* &c.

E.—Cost of Production per Ton.

	Shillings.		
	Coal.	Pig Iron.	Observation.
France . .	10	73	The French Government is responsible for this table.
Prussia . .	5	59	
England . .	8	50	
Belgium . .	8	47	
Australia . .	7	...	

Digitized by Google

F.—British Mining in 1881.

	Tons, Thousands.	Value, Thousands.
Coal . . .	154,200	£65,530
Ironstone .	19,800	10,900
Salt . . .	2,100	1,300
Lead & copper	70	490
Tin, &c. . .	40	500
Total .	176,210	£78,720

G.—German Mining in 1882.

	Tons, Thousands.	Value, Thousands.
Coal . . .	52,100	£13,400
Lignite . .	13,000	1,800
Ironstone .	8,200	1,900
Salt . . .	780	700
Zinc . . .	700	620
Total .	74,780	£18,430

MINT.

A.—Amount of British Money Coined.

Reign.	Gold.	Silver.	Total.	Per Annum.
Henry III. .	...	£3,898	* £3,898	...
Edward I. .	...	38,603	38,603	£1,100
Edward II. .	...	45,751	45,751	2,300
Edward III. .	£11,344	85,703	† 97,047	1,960
Richard II. .	3,988	2,228	6,216	300
Henry IV. .	396	315	711	...
Henry V. .	19,746	6,924	26,670	3,000
Henry VI. .	318,444	579,225	897,669	22,000
Edward IV. .	10,248	47,843	‡ 58,091	2,700
Henry VII. .	8,399	116,100	124,499	5,000
Henry VIII.	675,400	642,810	1,318,210	34,500
Mary . . .	...	6,500	6,500	...
Elizabeth . .	795,135	4,836,802	5,631,937	125,000
James I. . .	3,666,400	1,807,300	5,473,700	248,000
Charles I. .	3,319,700	8,776,545	12,096,245	502,000
Cromwell . .	154,512	1,000,000	1,154,512	115,000
Charles II. .	4,177,254	3,722,180	7,899,434	320,000
James II. .	2,113,639	2,115,600	4,229,239	1,410,000
William III. .	3,418,060	7,094,080	10,512,140	820,000
Anne . . .	2,485,100	618,200	3,103,300	255,000
George I. . .	8,492,900	223,050	8,715,950	670,000
George II. .	11,662,200	304,360	11,966,560	360,000
George III. .	75,447,489	6,827,800	82,275,289	1,370,000
George IV. .	36,395,100	2,216,168	38,611,268	3,860,000
William IV. .	10,920,035	1,122,100	12,042,135	1,720,000
Victoria . .	189,586,200	17,839,400	§ 207,425,600	9,400,000
,, . .	57,352,000	...	‖ 57,352,000	
,, . .	1,950,000	156,300,000	¶ 158,250,000	
Total .	£412,983,689	£216,379,485	£629,363,174	£950,000

* At Canterbury.
† At York and Calais.
‡ At Bristol.
§ At London.
‖ At Melbourne.
¶ In India.

All the rest were coined at London.

Digitized by Google

B.—Coined since 1850.

	Tons.		Millions £.			Amount per Inhab., Medium Population.
	Gold.	Silver.	Gold.	Silver.	Total.	
U. Kingdom . .	1,101	1,412	153	13	166	£5 7 0
France . . .	2,145	4,975	299	45	344	9 11 0
Germany . . .	637	6,252	89	56	145	3 13 0
Russia	822	2,272	115	20	135	1 15 0
Austria . . .	97	4,242	14	38	52	1 10 0
Italy	73	2,202	10	20	30	1 4 0
Spain	120	1,100	17	10	27	1 16 0
Portugal . . .	94	80	13	1	14	3 15 0
Belgium . . .	167	2,008	23	18	41	8 2 0
Holland . . .	46	3,288	6	30	36	10 3 0
Scandinavia . .	35	211	5	2	7	1 1 0
Europe . . .	5,337	28,042	744	253	997	3 10 6
U. States . . .	1,528	5,081	213	46	259	3 9 0
Australia . . .	453	...	63	...	63	35 0 0
India	15	21,780	2	196	198	1 0 0
Total . . .	7,333	54,903	1,022	495	1,517	£3 1 0

C.—Amounts Minted in 1881.

	Gold, £.	Silver, £.	Total, £.	Per Inhab.
Great Britain .	30,000	580,000	610,000	£0 0 4
France . . .	990,000	...	990,000	0 0 6
Germany . . .	700,000	...	700,000	0 0 4
Russia . . .	21,400,000	6,580,000	27,980,000	0 7 0
Austria . . .	260,000	5,190,000	5,450,000	0 3 0
Italy	190,000	...	190,000	0 0 2
Spain	370,000	5,970,000	6,340,000	0 8 0
Belgium . . .	400,000	600,000	1,000,000	0 3 8
Holland . . .	500,000	...	500,000	0 2 6
Other countries	270,000	...	270,000	...
Europe. . .	25,110,000	18,920,000	44,030,000	0 3 0
United States .	11,220,000	5,660,000	16,880,000	0 6 8
India	790,000	2,390,000	3,180,000	0 0 4
Span. America .	2,510,000	5,030,000	7,540,000	0 6 6
Total . .	39,630,000	32,000,000	71,630,000	0 2 8

In Table B, the amounts coined include much that has been re-minted, such as Napoleons converted in Germany.

Digitized by Google

The Latin Union (France, Belgium, Switzerland, Italy, and Greece), coined between 1795 and 1879 as follows:—

		Balance now existing (1881).
Gold . . .	£348,600,000	£193,000,000
Silver . . .	220,500,000	124,000,000
Total . .	£569,100,000	£317,000,000

It appears, therefore, that almost all the coin has been twice minted.

MONEY.

A.—Amount in Millions £.

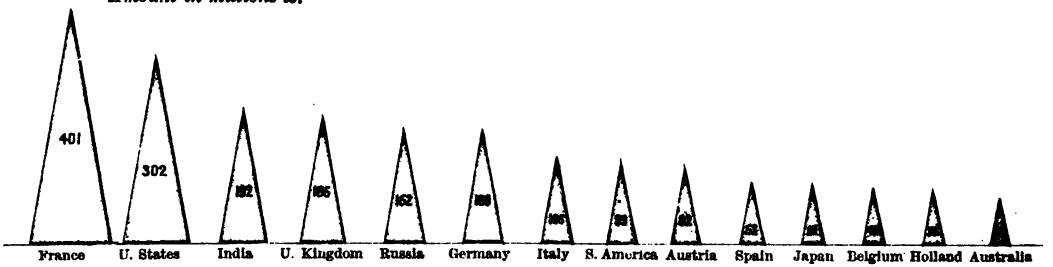
	Gold.	Silver.	Paper.	Total.	Per Inhabitant. Gold.	Per Inhabitant. All Money.
U. Kingdom.	124	19	42	185	£3 10 0	£5 6 0
France. . .	191	110	100	401	5 0 0	10 10 0
Germany . .	75	33	42	150	1 17 0	3 4 0
Russia . . .	22	12	118	152	0 5 0	1 15 0
Austria . .	8	12	62	82	0 4 0	2 3 0
Italy . . .	30	15	60	105	1 2 0	3 16 0
Spain . . .	28	13	12	53	1 15 0	3 3 0
Portugal . .	10	4	1	15	2 7 0	3 10 0
Belgium . .	16	13	13	42	3 0 0	7 12 0
Holland . .	5	12	16	33	1 5 0	8 5 0
Denmark . .	2	1	4	7	1 0 0	3 10 0
Swed. & Nor.	4	1	7	12	0 17 0	2 0 0
Switzerland .	4	3	4	11	1 10 0	4 0 0
Greece, &c. .	3	3	4	10	0 6 0	1 0 0
Europe . .	522	251	485	1,258	1 13 0	4 0 0
United States	115	42	144	301	2 5 0	5 15 0
Canada . .	2	...	10	12	0 9 0	2 15 0
Span. America	13	15	65	93	0 9 0	3 0 0
India . . .	10	170	12	192	0 1 0	1 0 0
Japan . . .	15	10	26	51	0 10 0	1 12 0
Australia . .	13	1	5	19	4 10 0	6 6 0
Cape Colony.	6	1	1	8	6 0 0	8 0 0
Algeria . .	2	1	3	6	0 13 0	2 0 0
The World	698	491	751	1,940	1 2 0	6 0 0

The volume of paper-money is increasing more rapidly than specie: since 1848, for example, paper-money has multiplied fourfold, specie less than threefold. In 1848 paper-money was about 20 per cent. of all the currency in use: in 1880 it was 38 per cent.

Digitized by Google

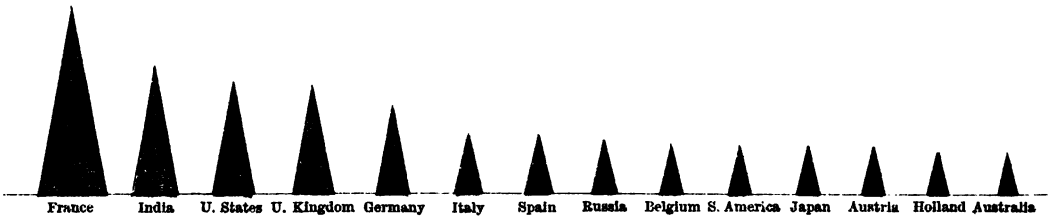
MONEY.

Amount in millions £.



The above comprises gold, silver, and paper money.

Amount of coin, millions £.



The above does not include copper, the value of which is trifling.

Digitized by Google

Digitized by Google

B.—Money, Banking, and Commerce.

	Millions £ Sterling.			Aliquot Parts.		
	Money.	Banking Power.	Commerce.	Money.	Banking.	Commerce.
United Kingdom.	185	840	570	11·8	33·6	24·4
France	401	205	340	25·6	8·2	14·6
Germany . . .	150	285	330	9·5	11·4	14·1
Russia	152	155	120	9·7	6·2	5·1
Austria	82	166	128	5·2	6·6	5·4
Italy	105	91	96	6·7	3·6	4·1
Spain and Port. .	68	22	53	4·3	0·9	2·3
Belg. and Holl. .	75	53	210	4·8	2·1	9·0
Scandinavia . .	19	35	55	1·2	1·4	2·4
Europe . . .	1,237	1,852	1,902	78·8	74·0	81·4
United States . .	301	531	310	19·2	21·2	13·3
Canada	12	35	35	0·8	1·4	1·5
Australia . . .	19	85	90	1·2	3·4	3·8
Total . .	1,569	2,503	2,337	100·0	100·0	100·0

C.—Hard Money at Various Epochs.

Year.	Amount in Millions £.						Ratio of United Kingdom, per Cent.
	United Kingdom.			The World.			
	Gold.	Silver.	Total.	Gold.	Silver.	Total.	
1600 . . .	1	2	3	28	102	130	2½
1700 . . .	12	4	16	72	225	297	5¼
1800 . . .	37	8	45	120	260	380	12
1848 . . .	55	11	66	150	280	430	15
1880 . . .	124	19	143	700	490	1,190	12

D.—Uncovered Paper Money.

	Amount in Millions £.			
	1850.	1860.	1870.	1880.
United Kingdom. .	15	16	12	10
France. . . .	3	10	8	13
Germany . . .	2	8	22	20
Russia	31	52	91	88
Austria . . .	18	39	58	48
Italy	...	...	36	59
Other countries . .	2	8	16	26
Europe . . .	71	133	243	264
United States . .	15	25	130	81
Spanish America, &c. .	6	22	55	85
The World . .	92	180	428	430

Digitized by Google

MONEY-ORDERS.—The amount transmitted from the United States in 1882 was £1,288,000, of which £640,000 to the United Kingdom. The amount received in United States from Europe was £1,660,000.

MONTS-DE-PIETE.—Government pawn-offices, of which there are 42 in France, yielding a net profit of £48,000 per annum, which goes to municipal hospitals. Similar institutions exist in Spain and Italy.

	No. of Pledges.	Amount.	Average.
France . .	2,970,000	£2,300,000	£0 15 6
Spain . . .	235,000	985,000	4 4 0

MORTAR.—In England a proper mixture requires one-third lime. In March 1882, some houses were ordered to be pulled down at West Brighton as unsafe, the mixture having only one-sixth lime.

MORTGAGES.

	Millions £.		Mortgage Ratio to Value, per Cent.	Average Rate of Interest, per Cent.	Ratio per Inhab.	
	Approx. amount of Mortgages.	Value of Houses and Land.			Mortgage.	Real Estate.
U. Kingdom.	1,600	3,920	41	4½	£45	£111
France. . .	770	4,460	17	5	20	120
Germany . .	1,700	3,450	49	5½	38	80
Russia . . .	450	2,240	20	7	6	30
Austria . .	300	2,040	15	6	8	55
Italy . . .	535	1,440	37	9	19	50
Spain and Port.	260	1,230	21	11	13	61
Holland . .	55	320	18	4½	14	80
Belgium . .	75	380	20	5	14	70
Scandinavia .	100	760	13	5½	16	118
Australia . .	120	360	33	6	40	120
Total . .	5,965	20,600	29	6	£20	£70

In England, according to Lord Reay, the landed properties are mortgaged for 58 per cent. of their value; in 1866 the estimate was only 33 per cent. In France the mortgages rose from 505 millions sterling in 1840 to 771 millions in 1877. In Prussia the land mortgages in 1869 were 51 per cent. of the value of the lands, and the house property of Berlin was mortgaged for 68 per cent. The mortgages held by the Imperial Bank of Russia reach 148 millions sterling. In Austria new mortgages average £11,000,000 per annum.

Digitized by Google

In Italy the mortgages rose from 353 millions sterling in 1862 to 535 millions in 1870. In Holland the latest return of mortgages (1869) showed 251,000 estates mortgaged for 37¼ millions sterling. In Spain the registry of mortgages averages 8½ millions sterling, and £172 per estate mortgaged. In New Zealand new mortgages average 9 millions sterling per annum, and £810 per estate mortgaged; releases average 3 millions sterling. In Egypt the new mortgages registered from 1878 to 1883 amounted to 6½ millions £.

MOUNTAINS.—Height in feet over sea-level:—

Dawalagiri . .	26,862	Ararat . . .	17,266	Lebanon . . .	9,520
Sorata . . .	25,250	Mount Blanc .	15,781	Sinai	7,500
Illimani . . .	24,450	Bighorn . .	14,430	Olympus . . .	6,500
Chimborazo .	21,440	Teneriffe . .	12,036	Puy-Dome . .	4,750
Hindoo Koosh	20,800	Egmont . .	11,433	Ben Nevis . .	4,358
Cotopaxi . .	19,600	St. Bernard .	11,006	Vesuvius . . .	3,978
Kaa-Mowna .	18,400	Etna . . .	10,963	Snowdon . . .	3,571
Orizaba . . .	17,371	Pic Blanc . .	10,205	Gibraltar . . .	1,432

The greatest height attained by Humboldt was 19,510 feet, in the Andes, but Mr. Whymper, in 1880, ascended Cotopaxi to 19,620 feet, and Chimborazo to 20,545 feet.

MUNIFICENCE.

Donor.	Amount.	Locality.	Object.
Peabody . .	£500,000	London . .	Lodging-houses.
Baird . .	500,000	Aberdeen .	Church endowment.
Jeejeebhoy . .	500,000	Bombay .	Hospital, schools.
Mason . .	430,000	Birmingham .	Orphanages.
Holloway . .	350,000	London . .	Hospital and school.
Gardner . .	300,000	„ . .	Blind asylum.
Guy . . .	240,000	„ . .	Hospital.
Ross . . .	200,000	Glasgow .	Hospitals.
Lick . . .	200,000	California .	Observatory.
Cooper . .	160,000	New York .	Schools.
Guinness . .	150,000	Dublin . .	Church.
Stewart . .	150,000	New York .	Hospitals.
Rowe . . .	120,000	Dublin . .	Church.
Aston . . .	100,000	New York .	Library.
Galignani . .	100,000	Paris . .	Asylum for aged.
Day . . .	100,000	London . .	Blind asylum.
Firth . . .	100,000	Sheffield .	Schools and asylum.
Salt . . .	100,000	Yorkshire .	Hospital, &c.
Rossini . .	100,000	Paris . .	Aged musicians.
Crossley . .	100,000	Halifax (Eng.)	Orphanage.

Digitized by Google

MURDER.

A.

	Annual Murders.	Annual Deaths.	Murders per 10,000 Deaths.
England	377	531,000	7·1
Ireland	91	103,000	8·8
France	662	835,000	8·0
Germany	995	1,148,000	6·4
Russia	2,000	2,474,000	8·0
Austria	600	680,000	8·8
Italy	2,470	840,000	29·4
Spain	1,200	505,000	23·8
Scandinavia	110	150,000	7·4
Switzerland	88	64,000	13·8
United States	2,057	980,000	21·5
Australia	63	37,000	17·0

Some countries include infanticide and manslaughter, others do not, for which reason a true comparison is impossible.

B.—HOMICIDE IN ENGLAND.

	Number of Victims.		
	Male.	Female.	Total.
Wilful murder	43	54	97
Manslaughter	115	58	173
Infanticide	48	56	104
Total	206	168	374

MUSEUMS.—United Kingdom, 1881.

	Visitors, Thousands Omitted.		Visitors, Thousands Omitted.
British Museum	790	National Gallery	958
South Kensington	1,017	Kew Gardens	612
Bethnal Green	451	Edinburgh	350
Patent Office	266	Dublin	192

N

NAPHTHA.—The production at Baku (Caspian Sea) has been, in millions of lbs. :—

1865	20	1873	143
1870	62	1875	206

Land sells at £900 per acre near the springs.

Digitized by Google

NATURAL HISTORY.—According to Prof. Phillips—

	Animals.	Plants.
Terrestrial	115,500	59,000
Fresh-water	3,560	100
Marine	11,750	1,000
Total . . .	130,810	60,100

The above classification was made in 1836.

NAVIES.

A.—STRENGTH IN 1882.

	Ships.	Men.	Guns.	Cost, Thousands.	Annual Cost, Pence per Inhab.
U. Kingdom .	210	58,000	1,481	£10,700	72
France . .	356	43,000	2,834	6,800	44
Germany . .	81	16,000	570	2,000	11
Russia . .	389	26,000	836	3,000	9
Austria . .	65	10,000	320	900	6
Italy . . .	67	15,000	480	1,800	16
Spain . . .	121	14,000	525	1,300	19
Portugal . .	41	3,000	178	300	16
Holland . .	120	8,000	560	1,000	60
Denmark . .	58	1,000	245	300	36
Sweden and Nor.	264	9,000	672	500	19
Europe . .	1,772	203,000	8,701	28,600	24
U. States . .	138	8,000	1,055	3,100	14
Brazil . .	41	4,000	166	1,200	32
Japan . .	27	6,000	149	600	5
Argent. Republic	27	2,000	88	200	24
Chili . . .	23	3,000	55	200	21
The World .	2,028	226,000	10,214	£33,900	22

B.—NAVIES OF 1840.

	Ships.	Guns.	Ratio of Fighting Power.
Great Britain . . .	392	16,310	40
France	146	7,620	19
Russia	83	5,460	14
United States . . .	60	3,250	8
Turkey	33	2,440	6
Holland	30	1,640	4
Spain	26	610	1½
Other countries . .	57	2,779	7½
The World .	827	40,109	100

Digitized by Google

C.—Iron-clad Fleets in 1882.

	Vessels.	Tons.	Average Tons.	Plating, Inches. Max.	Guns.	Tonnage of Guns.	Do. per Vessel.
Great Britain	51	375,000	7,400	24	470	7,030	138
France. . .	59	309,000	5,200	21	464	5,695	101
Germany . .	24	97,000	4,040	10	146	2,055	86
Russia . . .	29	92,000	3,170	18	162	2,424	84
Austria . .	14	58,000	4,160	13	132	1,420	101
Italy . . .	18	81,000	4,450	36	133	2,195	122
Spain . . .	10	33,000	3,300	6	195	810	81
Turkey . .	15	61,000	4,070	12	134	1,335	89
Holland . .	19	34,000	1,800	8	57	622	33
Denmark . .	7	23,000	3,300	10	63	511	73
Swed. and Nor.	18	10,000	550	...	26	104	6
Portugal . .	3	4,000	1,300	10	31	86	29
Europe . .	267	1,177,000	4,400	36	2,013	24,557	92
United States	24	24,000	990	...	74	...	...
Brazil . . .	9	11,000	1,200	...	45	...	...
Argentine. .	3	5,000	1,700	...	15	...	...
Chilian . .	3	4,000	1,300	9	22	225	75
Japan . . .	4	11,000	2,800	9	19	244	61
The World	310	1,232,000	3,970	36	2,188	25,026	81

The progress of "iron-clad science" in 30 years has been:

1854. Gunboats built for Crimean war, 4-inch plates, perfectly shot-proof.

1862. Merrimacs and Monitors used in American war.

1873. English rifle cannon send 200 lb. shots, 9-ton guns, through 8-inch plates.

1874. Plates of 10 inches pierced in like manner.

1876. Armstrong 100-ton guns broke 22-inch Creusot steel plates.

1879. Shot from 9-inch gun, 75 lbs. powder, unable to pierce a 12-inch plate of iron and steel alternate layers.

1880. Result of Krupp's experiments:—

Gun.	Inch.	Shot, Lbs.	Penetration.	Foot Tons.
Krupp . .	9½	348	18·1	8,630
British . .	11½	812	17·9	12,260

Krupp's shot penetrated 18-inch plates, the British did not.

1882. Italian ironclad, "Lepanto," has plates 36 inches thick.

Digitized by Google

D.—PRINCIPAL IRONCLADS AFLOAT.

Name.	Flag.	Tonnage.	Horse-power.	Maximum Plates, Inches.	Tons of Guns.
Lepanto . . .	Italian . .	14,600	18,000	36	480
Duilio	,, . .	10,650	7,500	22	400
Inflexible. . .	British . .	11,170	8,000	24	324
Colossus . . .	,, . .	9,160	6,000	18	172
Baudin . . .	French . .	11,440	7,000	21	300
Redoubtable .	,, . .	8,700	6,000	9	172
Kon. Wilhelm .	German . .	9,400	8,000	9	300
Mésoudiyé . .	Turkish . .	9,100	5,500	12	235
Peter the Great	Russian . .	9,500	2,200	14	140
Tegethoff. . .	Austrian .	7,400	8,000	13	150
Vittoria . . .	Spanish . .	7,100	5,000	6	160
Nederland . .	Dutch . .	3,500	2,200	8	140
Heligoland . .	Danish . .	5,500	3,700	10	98
Foo-so . . .	Japan . .	3,700	3,500	9	75
Cochrane. . .	Chili . . .	2,200	2,500	9	75
Brown . . .	Argentine .	1,700	1,500	9	75

The average cost of building ironclads has been, per ton, British £48, French £55, Italian £57, German £60. Including guns and equipment, an ordinary ironclad now costs £80 per ton. The new Italian vessel, "Lepanto," is the greatest war-vessel ever built, and cost £1,100,000, fully equipped: she was 6 years building, and is 402 feet keel.

E.—BRITISH AND FRENCH IRONCLADS COMPARED.

Class.	Vessels.		Guns, Tons.		Guns, Tons, per Ship.	
	British.	French.	British.	French.	British.	French.
1st . .	9	11	1,826	2,084	203	190
2nd . .	27	17	4,097	2,490	151	146
3rd . .	15	31	1,107	1,391	74	45
Total .	51	59	7,030	5,965	138	101

F.—BRITISH DOCKYARDS (1866–80).

Built by	Tons Built, Thousands.			Cost, Thousands £.		
	Iron.	Wooden.	Total.	Iron.	Wooden.	Total.
Government . .	123	85	208	5,466	3,964	9,430
Contractors. . .	55	41	96	2,709	2,321	5,030
Total . .	178	126	304	8,175	6,285	14,460

Digitized by Google

The cost of construction per ton of displacement was less in Government, but per ton of hull less in contractors' yards, viz. :—

	Dockyard.	Contractors.
Per ton displacement .	£45 7 0	£52 8 0
,, of hull . .	43 8 0	41 12 0

The cost of French ironclads built in State dockyards has been 30 per cent. more than those built by contractors.

G.—RISE OF BRITISH NAVY.

Year.	Vessels.	Tons.	Guns.	Men.	Cost per An.
1603	42	17,000	...	...	£180,000
1685	179	104,000	6,930	10,000	390,000
1760	325	321,000	10,600	51,000	5,611,000
1803	450	461,000	24,800	180,000	12,037,000
1850	585	570,000	17,200	48,000	6,438,000
1882	210	680,000	1,480	58,000	10,700,000

H.—AGE OF MEN IN BRITISH NAVY.

Under 25	53 per cent.
25 to 35	33 ,,
35 to 45	12 ,,
Over 45	2 ,,
Total . . .	100

The death-rate during the past 10 years averaged 10·4 per 1000, against 19·6 in the British mercantile marine.

I.—BRITISH NAVY EXPENDITURE (1882).

	Number.	Cost.
Seamen	58,100	£3,718,000
Workmen . . .	16,000	1,446,000
Pensions . . .	...	2,063,000
Stores	...	2,406,000
Sundries	...	1,093,000
Total		£10,726,000

NEGROES IN UNITED STATES.

Year.	Number, Thousands.	Ratio to Pop., per Cent.	Year.	Number, Thousands.	Ratio to Pop., per Cent.
1800 . . .	1,002	19	1860 . .	4,442	14
1820 . . .	1,772	19	1870 . .	4,880	13
1840 . . .	2,874	17	1880 . .	6,581	13

Digitized by Google

NERVOUS SYSTEM.

	Infants.	Youths.	Adults.	Aged Persons.	Idiots.
Water . . .	82·8	74·3	72·5	73·9	70·9
Albumen . .	7·0	10·2	9·4	8·6	8·4
Fat . . .	3·5	5·3	6·1	4·3	5·0
Salts, &c. . .	5·9	8·6	10·2	12·2	14·8
Phosphorus . .	0·8	1·6	1·8	1·0	0·9
Total . .	100·0	100·0	100·0	100·0	100·0

NEWS.—In 1811 the news published in the Paris papers had taken the following number of days to reach Paris :—

From	Days.	From	Days.	From	Days.
Strasburg . . .	6	Brest	6	Rome	11
Lyons	6	Antwerp . . .	7	Madrid . . .	21

The average speed was 70 miles a day. For newspapers see *Press.*

NICOTINE.—Orfila found in

Havannah tobacco	2 per cent.
French „	6 „
Virginia „	7 „

The proportion in Brazilian is still higher.

NITRE.—Atacama (Chile) exports 350,000 tons per annum. The nitre is about 2 feet below the surface; one bed covers 5000 acres, 4 feet in thickness, say 25 million tons, worth 300 millions sterling.

O

OAK. See *Trees.*

OATS.

	Acres, Thousands.	Bushels, Millions.	Bushels per Acre.
United Kingdom . .	4,180	130	31
France	9,010	220	24
Germany	9,120	180	20
Russia	32,800	520	16
Austria	7,200	130	18
Italy and Spain . .	2,000	32	16
Belgium and Holland .	900	35	38
Scandinavia . . .	2,500	76	30
Europe	67,710	1,323	20
United States . . .	15,200	403	26
Canada	2,000	55	28
Total . . .	84,910	1,781	21

The oat-crop of the world is worth 205 millions sterling. See *Grain.*

Digitized by Google

OBESITY. See *Corpulence.*

OBELISKS.

Name.	Locality.	Height, Ft.	Weight, Tons.
Wellington	Dublin	205	1,000
Monument	London	202	1,800
Nelson	,,	177	1,500
,,	Dublin	125	1,000
*Lateran	Rome	105	445
Alexander	St. Petersburg	84	200
*Vatican	Rome	83	220
*Luxor	Paris	76	240
*Cleopatra	London	68	140
*Meidan	Constantinople	50	60
*Quirinal	Rome	48	60

In the foregoing table those marked with an asterisk are Egyptian monoliths, or real obelisks, of extreme antiquity. There is also a very fine obelisk at Heliopolis, still standing. The second of Cleopatra's Needles has been removed to the United States, for erection in New York.

OBSERVATORIES.

A.—NUMBER.

United Kingdom	14
France	6
Germany	29
Russia	12
Italy	9
Austria	8
Switzerland	4
Other countries	12
Europe	94
United States	19
Canada	1
Spanish America	7
Asia	2
Africa	2
Australia	3
The World	128

B.—TELESCOPES.

	Inches Aperture.
Lord Rosse	72
Lassell	48
Herschell	48
Polkova	30
San José, California	28
Vienna	27
Washington	26
Newcastle	25
Pultowa	16
Cambridge, U.S.	15
Paris	13
Greenwich	12
Cincinnati	12
Munich	11
Rome	10
Berlin	10

Leyden Observatory was founded 1632, Copenhagen 1637, Greenwich 1675, Paris 1677.

Lord Rosse's telescope brings the moon apparently within 50 miles of our view.

Digitized by Google

OCCUPATIONS.

A.—Workers in all Nations.

	Thousands.			Ratio.			Total.
	Agriculture.	Manufacture.	Various.	Agriculture.	Manufacture.	Various.	
England . .	1,657	5,138	7,968	11·3	34·7	54·0	100
Scotland . .	270	749	1,171	12·3	34·0	53·7	100
Ireland . .	1,062	354	2,150	29·9	9·9	60·2	100
U.Kingdom	2,989	6,241	11,289	14·6	30·4	55·0	100
France . .	14,162	6,615	6,988	51	24	25	100
Germany .	12,920	10,140	7,014	43	34	23	100
Russia . .	40,590	2,436	6,494	81	5	14	100
Austria . .	13,755	3,266	7,987	55	13	32	100
Italy . . .	12,862	1,274	4,174	70	7	23	100
Spain . . .	3,360	1,344	6,416	30	12	58	100
Portugal . .	1,251	220	1,306	45	8	47	100
Belgium . .	1,512	1,436	828	40	38	22	100
Holland . .	1,563	321	806	58	12	30	100
Scandinavia	3,540	520	1,750	61	9	30	100
Europe .	108,504	33,813	55,052	55	17	28	100
U. States .	7,713	3,526	18,876	26	12	62	100
Total . .	116,217	37,339	73,928	51	17	32	100

The United Kingdom is on the Census returns for 1871: see Appendix for 1881. Most of the above items are official.

B.—Occupations in United Kingdom.

	Thousands.			Ratio.		
	1851.	1861.	1871.	1851.	1861.	1871.
Professional . .	387	599	794	2·2	3·1	3·9
Commercial . .	759	822	1,038	4·3	4·3	5·1
Agricultural .	3,922	3,436	2,989	21·8	18·1	14·6
Manufacturing .	4,254	5,842	6,241	23·8	30·7	30·4
Various . . .	8,539	8,299	9,457	47·9	43·8	46·0
Total .	17,861	18,998	20,519	100·0	100·0	100·0
Children . . .	9,651	10,066	11,139	...	...	...
Population .	27,512	29,064	31,658	...	...	...

For Census of 1881, see Appendix.

Digitized by Google

C.—Occupations in England.

Year.	Thousands.			Percentage.		
	Agri-culture.	Trade and Manufac.	Various.	Agri-culture.	Trade and Manufac.	Various.
1811 . .	896	1,129	519	35	44	21
1821 . .	979	1,350	612	33	46	21
1831 . .	961	1,435	1,018	28	42	30
1841 . .	1,499	3,111	2,180	22	46	32
1851 . .	2,029	3,692	5,927	17	31	52
1861 . .	2,011	4,829	6,234	15	37	48
1871 . .	1,657	5,953	7,153	11	40	49

D.—Occupations in England, under Sexes.

Class.	Males, Thousands.			Females, Thousands.		
	1851.	1861.	1871.	1851.	1861.	1871.
Professional . .	201	385	486	71	97	198
Commercial . .	470	585	758	51	38	57
Agricultural . .	1,571	1,632	1,470	458	379	187
Manufacturing . .	2,476	3,263	3,616	695	1,566	1,522
Various . . .	989	505	858	4,666	4,626	5,611
Children . . .	3,073	3,431	3,871	3,199	3,612	4,078
Total . .	8,780	9,801	11,059	9,140	10,318	11,653

E.—Occupations in England, according to Age.

Class.	Thousands.					
	Under 20.			Over 20.		
	1851.	1861.	1871.	1851.	1861.	1871.
Professional . .	22	63	204	250	419	480
Commercial . .	115	121	164	406	502	651
Agricultural . .	439	405	356	1,590	1,606	1,301
Manufacturing . .	775	1,083	1,147	2,396	3,746	3,991
Various . . .	1,244	1,077	1,455	4,411	4,052	5,014
Total . .	2,595	2,749	3,326	9,053	10,325	11,437

Digitized by Google

F.—Ratio in England, under Sexes.

Class.	1851.			1871.		
	Male.	Female.	Total.	Male.	Female.	Total.
Professional . .	1·8	0·6	2·4	3·3	1·3	4·6
Commercial . .	4·0	0·4	4·4	5·2	0·4	5·6
Agricultural . .	13·5	4·0	17·5	10·0	1·3	11·3
Manufacturing . .	21·3	6·0	27·3	24·4	10·3	34·7
Various . . .	8·5	39·9	48·4	5·8	38·0	43·8
Total . .	49·1	50·9	100·0	48·7	51·3	100·0

G.—Ratio of English Occupations (Age).

	1851.			1871.		
	Under 20.	Over 20.	Total.	Under 20.	Over 20.	Total.
Professional .	0·2	2·2	2·4	1·3	3·2	4·5
Commercial .	1·0	3·5	4·5	1·1	4·2	5·3
Agricultural .	3·8	14·0	17·8	2·4	8·5	10·9
Manufacturing	6·6	20·6	27·2	7·7	27·5	35·2
Various . .	10·7	37·4	48·1	9·9	34·2	44·1
Total . .	22·3	77·7	100·0	22·4	77·6	100·0

H—Occupations in Scotland.

	Thousands.			Percentage.		
	1851.	1861.	1871.	1851.	1861.	1871.
Professional . .	33	52	54	1·7	2·6	2·5
Commercial . .	74	83	115	4·0	4·2	5·2
Agricultural .	361	372	270	19·8	18·6	12·3
Manufacturing .	543	682	749	28·8	34·1	34·0
Various . . .	860	806	1,002	45·7	40·5	46·0
Total . . .	1,871	1,995	2,190	100·0	100·0	100·0
Children . . .	1,018	1,070	1,176	...	...	...
Population .	2,889	3,065	3,366	...	...	...

Digitized by Google

I.—Occupations in Ireland.

Year.	Adult Population, Thousands.			Ratio.		
	Agricultural.	Various.	Total.	Agricultural.	Various.	Total.
1841 .	1,904	3,015	4,917	39	61	100
1851 .	1,532	2,660	4,192	37	63	100
1861 .	1,053	2,794	3,847	27	73	100
1871 .	1,062	2,504	3,566	30	70	100
1881 .	998	2,372	3,370	30	70	100

K.—Trades and Professions in England.

	Thousands.				Thousands.		
	1841.	1851.	1871.		1841.	1851.	1871.
Actors	1	2	7	Gunsmiths . .	5	7	12
Architects . . .	1	3	6	Hairdressers . .	9	11	13
Artists	3	7	17	Hatters . . .	17	16	22
Bakers	36	52	59	Iron operatives .	117	265	360
Bookbinders . .	5	10	16	Law	18	27	37
Booksellers . .	5	7	8	Linen operatives	16	27	27
Brewers	9	17	26	Medicine . . .	17	29	44
Bricklayers . .	39	67	100	Merchants . .	11	8	16
Brickmakers . .	17	28	39	Millers . . .	22	33	30
Builders . . .	8	12	23	Miners . . .	168	261	376
Butchers . . .	45	63	76	Municipal officials	12	27	51
Carriers . . .	195	346	528	Papermakers .	5	11	17
Carpenters . . .	137	156	206	Plumbers . . .	38	56	103
Civil Service . .	20	36	54	Potters . . .	24	35	45
Clergy	15	28	39	Printers . . .	15	22	45
Clerks	49	60	119	Railway officials	3	25	85
Coachmakers . .	12	17	23	Saddlers . . .	14	15	23
Coopers	14	16	19	Sawyers . . .	25	31	28
Cotton operatives	215	458	533	Servants . . .	977	908	1,503
Dressmakers . .	92	234	299	Shipbuilders . .	17	20	41
Druggists . . .	10	15	19	Shoemakers . .	188	240	223
Engineers, Civil .	2	3	5	Silk operatives .	54	117	77
Engine-drivers .	...	7	31	Tailors . . .	108	132	150
Fishermen . . .	10	17	21	Teachers . . .	47	67	127
Gamekeepers . .	6	8	12	Upholsterers . .	26	34	57
Gardeners . . .	45	72	98	Waggoners . .	26	44	74
Gaswork operat. .	1	6	14	Watchmakers .	13	17	22
Glassmakers . .	7	12	20	Wheelwrights .	25	28	30
Greengrocers . .	8	14	26	Wine-merchants	2	7	10
Grocers	41	71	111	Woollen operat.	109	242	252

Digitized by Google

L.—Occupations in England in 1871.

	Thousands.				Thousands.		
	Males.	Females.	Total.		Males.	Females.	Total.
Actors . . .	5	2	7	Hatters . . .	14	8	22
Artists . . .	15	2	17	Hemp operatives	12	5	17
Bakers . . .	53	6	59	Innkeepers . .	61	16	77
Bookbinders. .	8	8	16	Iron operatives	342	18	360
Booksellers . .	7	1	8	Jewellers . .	24	4	28
Brickmakers .	36	3	39	Linen operatives	16	11	27
Butchers . . .	73	3	76	Medicine . .	41	3	44
Carriers . . .	516	12	528	Miners . . .	370	6	376
Civil service. .	51	3	54	Municipal officers	48	3	51
Children at school . .	1,821	1,743	3,564	Musicians . .	12	7	19
				Papermakers .	10	7	17
Children not at school .	1,883	2,094	3,977	Potters . . .	29	16	45
				Printers . . .	44	1	45
Cotton operatives	206	327	533	Saddlers . . .	21	2	23
Fishmongers .	13	2	15	Servants . . .	158	1,345	1,503
Gardeners . .	96	2	98	Shoemakers .	197	26	223
Gentry . . .	26	143	169	Silk operatives.	26	51	77
Glass-makers .	18	2	20	Tailors . . .	112	38	150
Greengrocers .	19	7	26	Teachers. . .	33	94	127
Grocers . . .	89	22	111	Upholsterers .	48	9	57
Gunsmiths . .	11	1	12	Watchmakers .	21	1	22
Hairdressers .	12	1	13	Woollen operat.	128	124	252

M.—Occupations in Germany (1881).

Class.	Prussia.	Germany.
Agricultural	42·7	41·5
Manufactures	33·2	31·1
Commerce	8·2	6·2
Sundry	15·9	21·2
Total	100·0	100·0

OCEANS. See *Seas.*

OCTROI.

A.—Aggregate for all Towns in France.

Year.	Amount.	Population Taxed.	Per Inhab. Shillings.
1823 . .	£2,470,000	5,998,000	8
1833 . .	2,640,000	6,306,000	8
1843 . .	3,302,000	7,297,000	9
1853 . .	3,617,000	7,330,000	10
1863 . .	6,298,000	9,582,000	13
1873 . .	8,451,000	10,517,000	16
1880 . .	11,040,000	11,255,000	20

Digitized by Google

B.—COMPONENTS OF OCTROI IN 1877.

Levied on	Amount.	Per Inhab. Pence.
Wine	£3,073,000	68
Spirits	720,000	16
Meat, bread, &c. . .	3,531,000	78
Fuel, forage . . .	1,504,000	33
Sundries . . .	1,177,000	25
Total .	£10,005,000	220

C.—OCTROI OF PARIS.

Year.	Amount.	Population.	Per Head, Shillings.
1801 . . .	£441,000	553,000	16
1821 . . .	1,040,000	724,000	29
1845 . . .	1,370,000	986,000	28
1867 . . .	4,030,000	1,732,000	46
1880 . . .	5,640,000	2,180,000	52

D.—INCREASE SINCE 1867.

	Amount.		Shillings per Inhab.	
	1867.	1880.	1867.	1880.
Paris . . .	£4,030,000	5,640,000	46	52
Marseilles . .	307,000	490,000	21	28
Lyons . . .	244,000	480,000	16	25
Rouen . . .	102,000	155,000	21	29
Bordeaux . .	112,000	...	12	...
Nice	...	75,000	...	28

OIL.

A.—POUNDS OF OIL FROM 100 LBS. OF

Horse-chestnuts . 6	Indian linseed . . 29	Almonds 48
Beechmast . . . 16	Olives 33	Poppy 58
Hempseed . . . 18	Rape 33	Walnuts 60
European linseed . 25	Colza 40	Castor-oil seed . . 62

B.—PRODUCTION OF OLIVE OIL.

	Acres (Thousands Omitted).	Tons Olives.	Oil, Million Gallons.	Gallons per Acre.	Value of Crop (Thousands Omitted).
Italy . . .	2,224	110,000	31	14	£5,800
Spain and Portugal	1,500	90,000	25	16	3,800
France . . .	320	22,000	6	18	1,200
Greece . . .	400	18,000	5	12	700
Total .	4,444	240,000	67	15	£11,500

Digitized by Google

C.—Petroleum in United States.

Year.	Annual Average, Millions of Gallons.		Value Produced (Thousands Omitted).	Per Gallon, Pence.
	Production.	Export.		
1859–63. . .	60	6	£5,700	22
1864–68. . .	130	48	9,300	17
1869–73. . .	320	133	11,600	9
1874–80. . .	680	340	13,700	5
1881 . . .	960	460	15,600	4

There are 15,500 wells within an area of 40 square miles (Pennsylvania), but only 6000 are working. Depth varies from 400 to 1200 feet. Each bore costs £1000, and only 1 in 5 strikes oil.

D.—Marine Oils.

	Annual Slaughter.	Gallons Oil.	Gallons per Carcass.
Whales . . .	1,500	3,300,000	2,200
Seals	550,000	2,600,000	5
Penguins . . .	1,300,000	130,000	1-10th.

About 300 gallons of oil will suffice in 20 minutes to smooth the roughest sea (Admiralty experiments, Aberdeen, December 3, 1882).

OPAL.—The Emperor of Austria has one weighing 17 ounces, and for which he refused an offer of £50,000.

OPERATIVES.

A.—Numbers Employed (Thousands).

	In Factories.		Mining.	Handicraft.	Total.	Ratio to Population, Per Cent.
	Textile.	Various.				
U. Kingdom .	1,060	720	550	3,911	6,241	18
France . . .	620	430	206	5,359	6,615	18
Germany . .	632	480	231	8,797	10,140	22
Russia . . .	354	286	207	1,589	2,436	3
Austria . . .	360	490	92	2,324	3,266	9
Italy	130	240	36	868	1,274	5
Spain . . .	90	110	71	1,073	1,344	8
Belgium. . .	280	130	105	921	1,436	26
United States.	545	1,534	660	787	3,526	7
Total . .	4,071	4,420	2,158	25,629	36,278	10½

Digitized by Google

B.—TEXTILE OPERATIVES IN UNITED KINGDOM.

Year.	Thousands. Men.	Women.	Children.	Total.	Ratio to Population, per Cent.
1835 . .	82	167	104	353	1·4
1850 . .	158	329	109	596	2·2
1880 . .	232	543	201	976	2·8
Cotton . .	115	259	108	482	...
Wool . .	72	118	48	238	...
Flax, &c. .	37	138	35	210	...
Silk . .	8	28	10	46	...
Total in 1880	232	543	201	976	...

	England.	Scotland.	Ireland.	U. Kingdom.
1835 . . .	295	40	18	353
1850 . . .	501	67	28	596
1860 . . .	643	95	38	776
1870 . . .	718	127	62	907
1880 . . .	774	138	64	976

See *Manufactures, Occupations, Wages.*

OPIUM.—Annual shipments from India :—

Years.	Chests.	Tons.	Value.	Per Ton.
1861–65 . .	73,100	4,305	£10,810,000	£2,510
1866–70 . .	82,800	4,870	11,240,000	2,290
1871–75 . .	89,200	5,250	11,790,000	2,250
1876–80 . .	102,100	6,005	12,640,000	2,106

The Chinese impose a duty of £5 per ton. It is retailed at 2 shillings per ounce, or double the price of native opium. The province of Hankow produces 5300 tons per annum. There are in China 3 million opium-smokers.

ORANGES.—Italy has 5,400,000 trees, which give 1600 million oranges yearly, say 300 per tree. The average in Seville is said to be 600 per tree. The island of St. Michael's, Azores, with an area of only 210,000 acres (about equal to the Isle of Man), sends 250 million oranges yearly to England, worth £300,000.

A.—EXPORTING COUNTRIES.

	Millions. 1862.	1870.	1880.
Spain . .	150	230	960
Italy . .	460	780	930
Greece . .	23	47	30
Azores . .	300	300	300

B.—IMPORTATION INTO U. KINGDOM.

	Millions.	Per Inhab.	Price, Bushel.
1854	244	9	9/
1861 . .	390	13	11/
1871 . .	712	23	8/
1881 . .	1,152	33	7/6

Digitized by Google

There is no return of the quantities shipped from the Azores in 1862 or 1870. Each inhabitant of the United Kingdom spends 1 shilling per annum on oranges, or, allowing for retail, almost 2 shillings.

ORCHARDS.—The orchards of the United Kingdom cover an area of 180,000 acres, and produce 85,000 tons of apples; those of France, 560,000 acres, from which are obtained 220 million gallons cider yearly.

ORPHANS.—In 1882 there were 61,000 in the French asylums. See *Charities.*

OSTRICHES.—The production of ostrich feathers is as follows:—

	Lbs. Feathers.	Value.	Average per Lb.
Cape Colony . .	260,000	£1,040,000	£4
Tripoli . . .	20,000	200,000	10
Egypt . . .	4,000	40,000	10
Morocco . . .	2,000	20,000	10
Buenos Ayres . .	160,000	32,000	4s.

About 35,000 birds are plucked annually at the Cape, averaging 3 lbs. per bird. In Buenos Ayres they are slaughtered, and the race is dying out.

OYSTERS.

	Per Annum. Production, Millions.		Consumption, Millions.	Per Inhab.
U. Kingdom . .	300	London . .	220	60
France . . .	380	Paris . . .	57	26
United States .	11,200	New York .	810	660
Portugal . . .	600	France . .	260	7
Total . .	12,480			

Baltimore packs 7 million bushels per annum. An oyster 3 months old is the size of a shilling, 6 months half-a-crown, but is not fit to eat before 4 years old. The oyster beds established by advice of Abbé Bonnetard in France produced 97 million oysters in 1881.

OZOKERIT.—Ozokerit is a mineral oil from layers of wax found at Borislav, Galitzia. The mines are about 250 feet deep, employing 9000 men, who raise 30,000 tons, worth £480,000 per annum.

OZONE.—The Scottish Meteorological Society report as follows:—

November . . .	5·3	May . . .	6·2
Annual average . . .			6·0

Digitized by Google

P

PALMS.—There are 13 million date-palms in India, which produce annually 4 lbs. sugar each. The number of date-palms in Egypt in 1880 was 4½ millions.

PAPER.

A.—Production and Consumption.

	Millions Lbs.		Consumption, Lbs per Inhab.
	Production.	Consumption.	
U. Kingdom	470	430	12·1
France	380	330	8·4
Germany	450	410	9·1
Russia	80	90	1·2
Austria	160	120	3·3
Italy	105	110	3·9
Spain	20	32	2·0
Portugal	10	10	2·2
Belgium	70	40	7·2
Holland	16	16	4·0
Scandinavia	38	30	3·5
Switzerland	20	18	6·8
Turkey and Greece	—	12	1·2
Europe	1,819	1,648	5·1
United States	530	540	10·2
Canada	14	18	4·1
Spanish America	2	44	1·3
Australia	...	17	6·1
Other countries	...	98	...
The World	2,365	2,365	...

B.—Components in Production.

Material.	Tons Used.	Tons, Paper.	Ratio of Paper to Material, per Cent.
Woollen rags	670,000	390,000	59
Cotton „	450,000	280,000	62
Linen, &c., „	100,000	50,000	50
Jute and Sparta	300,000	50,000	17
Wood and straw	400,000	40,000	10
Sundries	2,200,000	220,000	10
Total	4,120,000	1,030,000	25

Digitized by Google

In 1881 there were 3,960 paper-mills, employing 90,000 men and 180,000 women: there were 2,780 mills worked by steam-power. The capital employed in the industry exceeded 62 millions sterling. (There were in the United Kingdom 354 mills with 16,000 operatives, producing 210,000 tons of paper, or 13 tons per operative, per annum.) The paper industry of the world sums up thus:—

Rag, jute, &c.	£14,000,000
Chemicals	8,500,000
Wages	9,000,000
Coal	3,400,000
Profit, interest on capital, &c.	3,600,000
Value of paper	£38,500,000

C.—Manner of Consumption.

	Per Annum, Million Lbs.	Observation.
Daily papers	490	15 million copies daily.
Weekly, monthly, &c.	380	Issue 55 millions.
Books	150	85 million volumes.
Printing	1,020	Including engravings.
Schools	190	32 million children.
Public offices	160	Stationery, blue-books, &c.
Letters	220	6 milliard letters.
Account-books, &c.	120	Including circulars.
Wall-paper	450	
Papier-mache, &c.	205	
Total	2,365	

Wheels for railway waggons are now made of compressed paper, instead of iron. The dome of the new Palais de Justice at Brussels is all of paper. Flour barrels are made of it in the United States, one factory at Iowa turning out 1600 barrels daily, from 5 tons of paper, each barrel taking 6 lbs.

D.—British Paper-Trade (1882).

Imports from		Exports to	
Germany	£389,000	Australia	£575,000
Holland	238,000	India	188,000
Belgium	205,000	United States	57,000
France	118,000	Various	487,000
Various	258,000		
Total	£1,208,000	Total	£1,307,000

The above includes all kinds except hangings.

Digitized by Google

PAPER-MONEY.

A.—Amount in Millions £.

	1840.	1850.	1860.	1870.	1880.	Increase in 40 Years.
United Kingdom .	35	34	39	41	45	10
France	9	20	33	58	90	81
Germany	8	15	25	43	42	34
Russia	70	65	105	116	115	45
Austria	43	50	60	70	65	22
Italy	2	4	6	38	65	63
Spain, Belgium, &c.	18	30	36	42	64	46
Europe	185	218	304	408	486	301
United States. . .	20	33	41	158	144	124
Spanish America .	6	11	17	36	65	59
British Colonies . .	1	2	10	14	28	27
Cuba	...	...	4	6	12	12
Japan	...	...	...	...	26	26
The World .	212	264	376	622	761	549

B.—Bank of England Issue (1878).

Value of Note.	Number.	Amount.	Ratio, per Cent.
£5 . . .	2,208,000	£11,040,000	39
£10 . . .	507,000	5,070,000	18
£20–50–100 .	160,000	8,030,000	28
£200–300–500 .	7,000	2,120,000	8
£1000 . .	2,000	2,000,000	7
Total .	2,884,000	£28,260,000	100

The notes cost one halfpenny each. The life of a bank-note in 1880 was under 70 days, the number issued during the year having been 15,260,000 for an aggregate amount of 338 millions, say £22 each. The average in the above table, for 1878, is only £10 each.

C.—French Paper Money (1883).

Notes, Francs.	Number.	Amount, £ Sterling.
5	175,000	35,000
20	198,000	158,000
25	28,000	28,000
50	4,725,000	9,450,000
100	10,812,000	43,248,000
200	3,000	24,000
500	625,000	12,496,000
1,000	1,263,300	50,532,000
5,000	5	1,000
Total . .	17,829,305	115,972,000

Digitized by Google

D.—Currency Value Compared to Gold.

Year.	U. States.	Russia.	Italy.	Buenos Ayres.
1873	88	86	88	100
1875	87	84	92	100
1877	96	72	91	80
1879	100	70	89	74
1881	100	68	93	90
1883	100	64	100	100

See *Money, Green-backs, Roubles.*

PARKS.

A.—Remarkable Parks.

Name.	Place.	Acres.	Name.	Place.	Acres.
Regent's	London	450	Prater	Vienna	2,300
Hyde	„	400	Royal	Munich	1,300
Bois de Boulogne	Paris	2,100	Queen's	Edinburgh	407
Phœnix	Dublin	1,760			

B.—Parks in United Kingdom.

Cities.	Area, Acres.	Park Acres.	Inhabitants to an Acre. Municipal Area.	Park Area.
Birmingham	8,400	211	46	1,736
Bradford	7,200	215	26	889
Brighton	2,400	106	45	996
Bristol	4,500	442	47	475
Dublin	10,100	1,753	31	175
Edinburgh	4,200	407	54	410
Glasgow	6,100	447	96	1,293
Hull	3,600	26	40	4,721
Leeds	21,600	350	14	681
Leicester	3,200	65	39	1,256
Liverpool	5,200	525	103	1,025
London	75,400	1,790	48	1,114
Manchester	9,500	191	77	2,846
Newcastle	5,400	91	27	4,199
Norwich	7,500	7	11	12,175
Nottingham	9,900	150	17	1,129
Oldham	4,700	60	24	1,855
Plymouth	1,400	22	53	3,377
Portsmouth	4,500	31	29	8,239
Sheffield	19,700	49	15	3,761
Sunderland	2,800	24	41	4,774
Wolverhampton	3,400	50	22	1,510

PARLIAMENT.

A.—House of Lords.

Princes	4	Earls	139	Barons	272
Dukes	23	Viscounts	32	Total of members	515
Marquises	19	Bishops	26		

Digitized by Google

B.—House of Commons.

	County.	Borough.	University.	Total of Members.
England . . .	172	281	5	458
Wales . . .	15	15	...	30
Scotland . . .	32	26	2	60
Ireland . . .	64	37	2	103
United Kingdom	283	359	9	651

C.—Acts of Parliament since 1801.

	Public.	Private.	Total.
1801–10 . .	1,322	2,514	3,836
1811–20 . .	1,487	2,233	3,720
1821–30 . .	986	1,979	2,965
1831–40 . .	1,038	1,706	2,744
1841–50 . .	1,129	2,140	3,269
1851–60 . .	1,158	2,057	3,215
1861–68 . .	1,010	2,140	3,150
1869–82 . .	1,283	2,828	4,111
82 years .	9,413	17,597	27,010

D.—Prime Ministers since 1801.

Premier.	Months.	Public Acts Passed.	Monthly Average.	Period.
Addington . .	38	435	11	1801–1804
Pitt . . .	20	195	10	1804–1806
Grenville . . .	14	180	13	1806–1807
Portland . . .	39	453	12	1807–1810
Perceval . . .	24	269	11	1810–1812
Liverpool . . .	178	1,975	11	1812–1827
Canning . . .	4	28	7	1827
Goderich . . .	5	27	5	1827–1828
Wellington . .	34	223	7	1828–1830
Grey . . .	44	378	8	1830–1834
Melbourne . .	5	48	10	1834
Peel	4	30	7	1834–1835
Melbourne . .	77	640	8	1835–1841
Peel	58	547	9	1841–1846
Russell . . .	68	653	10	1846–1852
Derby . . .	10	73	7	1852
Aberdeen . . .	25	274	11	1852–1855
Palmerston . .	37	332	9	1855–1858
Derby . . .	16	139	9	1858–1859
Palmerston . .	76	797	10	1859–1865
Russell . . .	8	78	10	1865–1866
Derby . . .	20	229	11	1866–1868
Disraeli . . .	9	96	11	1868
Gladstone . .	62	565	9	1868–1874
Disraeli . . .	74	507	7	1874–1880
25 Premiers .	79 years	9,171	10	

Digitized by Google

PASSAGES.

Date.	Steamer.	Ports.	Days.	Hours.
1837	Great Western	Bristol—New York	19	2
1840	Britannia	Liverpool—New York	14	13
1843	Great Britain	New York—Liverpool	14	1
1875	City of Berlin	„ „	7	18
1876	Britannia	„ „	7	11
1881	Arab	Cape Town—Plymouth	18	13
1882	Alaska	New York—Cork	6	22

The Arab averaged 16, the Alaska 19 English statute miles per hour. The quickest passage from China to England was made in 1882 by the steamer Stirling Castle, from Hankow to London, in 29 days and 22 hours.

PASSENGERS.—The number of persons who crossed Waterloo Bridge, London, in a year, was as follows:—

1820	1,821,000	1850	4,295,000
1830	2,423,000	1860	4,873,000
1840	2,486,000	1863	5,145,000

In 1882 the number would not fall short of 7 millions.

In 1875 there were 38½ million persons and 7¼ million vehicles that crossed London Bridge.

The Dover and Calais steamers carried 440,000 passengers in 1882.

There were in 1881 cleared from British ports (United Kingdom) 334,000 vessels, carrying over 3,000,000 persons, of whom 750 were drowned, or 1 in 4000.

The ferry-boats between Liverpool and Birkenhead carry 22 million passengers yearly.

PATENT-OFFICE.

The returns for Great Britain and United States in 1880 compare as follows:—

	Great Britain.	United States.
Applications	5,517	19,402
Granted	3,740	12,340
Receipts	£190,000	£140,000
Average fees	£52	£12
Average terms	14 years	17 years

The applications in Great Britain rose to 6241 in 1882.

Digitized by Google

PAUPERS.

A.

	Thousands Omitted.		Comparative Cost.	
	Number.	Expenditure.	Per Pauper.	Per Inhab.
				Pence.
England	803	£8,015	£10·0	74
Scotland	99	850	8·5	56
Ireland	115	1,187	10·3	56
United Kingdom	1,017	£10,052	9·8	68
France	1,251	2,720	2·2	18
Prussia	1,310	4,730	3·6	42
Austria	1,220	3,700	3·1	25
Italy	1,365	2,700	2·0	23
Switzerland . . .	140	1,050	7·5	88
Spain and Portugal	600	1,100	1·8	13
Belgium and Holland	1,006	1,280	1·3	32
Scandinavia . . .	300	950	3·2	28
Total . .	8,208	£28,282	3·4	35

The custom in the United Kingdom is to count the number of paupers existing on a given day, say 1st January, but on the Continent to give the bulk number relieved during the year. The actual number at any time in France, Italy, &c., may be taken as one-third the figures above stated.

B.—Pauperism in United Kingdom: Numbers.

Year.	Thousands Omitted.			Ratio to Population.		
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.
1850 . .	921	79	308	5·11	2·72	4·61
1860 . .	851	77	45	4·26	2·58	0·77
1870 . .	1,079	126	74	4·69	3·78	1·38
1880 . .	803	99	115	3·09	2·66	2·21
	Expenditure (Thousands Omitted).			Pence per Inhabitant.		
1850 . .	£5,395	£582	£1,827	72	49	68
1860 . .	5,455	663	531	66	53	22
1870 . .	7,644	905	814	80	65	36
1880 . .	8,015	849	1,187	74	56	56

Digitized by Google

C.—Relative Burden of Pauperism (United Kingdom).

Year.	Thousands Omitted.		Paupers to Population.	Cost per Inhabitant.	National Income, Millions £.	Burden of Pauperism.
	No. of Paupers.	Expenditure.				
1850 .	1,308	£7,804	4·75	68d.	620	1·26
1860 .	973	6,649	3·35	55	760	1·14
1870 .	1,279	9,363	4·06	70	950	0·99
1880 .	1,016	10,051	2·90	68	1,200	0·84

As compared with national earnings the burden was threepence in the £ in 1850, and is now just twopence.

D.—Poor-Relief in England and Wales.

Period.	Annual Expenditure.	Per Inhab., Pence.	National Income, Millions £.	Percentage of Burden.
1702–14 . .	£910,000	41	65	1·40
1760–75 . .	1,520,000	58	122	1·24
1783–93 . .	2,050,000	66	145	1·41
1815–20 . .	7,106,000	152	220	3·23
1830–35 . .	6,742,000	114	385	1·75
1841–50 . .	5,250,000	74	490	1·07
1851–60 . .	5,510,000	69	580	0·95
1861–70 . .	6,740,000	77	720	0·94
1871–80 . .	7,710,000	75	935	0·82

In the period just after Waterloo the burden was 4 times as great as in the past 10 years.

PAVING.—The cost of paving and keeping in order a street 10 yards wide and 1000 yards long in wood and stone is shown as follows:—

	Heavy Traffic, £.		Light Traffic, £.	
	Wood.	Stone.	Wood.	Stone.
First cost	7,500	7,200	7,500	7,200
Maintenance, 30 years . .	15,000	3,600	7,500	2,400
Total . . .	22,500	10,800	15,000	9,600

Heavy traffic averages 100,000 tons, light 50,000 tons per yard per annum. The former wears wooden pavement an inch in five years. Some authorities estimate the first cost of paving per square yard as follows:—Stone 10, wood 14, asphalt 18 shillings.

Digitized by Google

PAWN-OFFICES.

A.—Pawn-brokers in Great Britain.

Year.	No.	Per Million Inhab.	Year.	No.	Per Million Inhab.,
1851 . .	1,873	89	1871 . .	3,450	132
1861 . .	2,578	111	1881 . .	4,372	146

The number of pledges is said to reach 190 millions per annum.

B.—Monts de Piete.

	Borrowers.	Amount.	Average, Shillings.
France . . .	2,970,000	£2,300,000	16
Spain . . .	235,000	985,000	84
Holland . . .	602,000	260,000	9

PEAT.

A.—Heating Power.

Bog of Allen, Ireland .	100	Passy, France . .	52
Hartz Mountains. .	61	Ham, „ . .	49
Konigsbrunn . .	57	Troyes, „ . .	32

The production in France is declining, not exceeding 300,000 tons per annum.

B.—British Peat Bogs.

	Acres.	Millions of Tons.	Value at 6 Pence per Ton.
Ireland . .	2,831,000	33,972	£850,000,000
Great Britain.	3,505,000	42,060	1,050,000,000
U. Kingdom .	6,336,000	76,032	£1,900,000,000

The average depth of peat is 12 feet, equal to a yield per acre of 12,000 tons of dried turf.

PEDESTRIANISM.

Name.	Miles.	Days.	Date.	Place.
Brown . .	550	6	Feb. 1880	London.
Hazel . .	660	6	„ 1882	New York.

Mr. Hazel is an Englishman, and won £4000. In June 1874 Miss Richards, of Bristol, walked 1000 miles in 1000 consecutive hours, to gain £50 for her aged parents.

PENGUINS. See *Oil.*

Digitized by Google

PENS.—Over 800 tons of steel are consumed yearly in making steel pens, Birmingham taking 500 tons.

	Million Steel Pens per Annum.	Steel Pens per Inhabitant.
United Kingdom	810	23
France	420	11
United States	105	2

The world consumes over 4 million steel pens daily, that is nearly 3 tons.

PEPPER.—The annual production averages:—

	Million Lbs.		Million Lbs.
Sumatra	28	Malabar	4
Siam	8	Borneo	3
Malacca	7	Total	50

PHOTOPHONE.—Sound was conveyed along a beam of light, for a distance of 700 feet, by Mr. Graham Bell, in September 1880.

PHTHISIS.

A.—Ratio of Consumption to all Sickness.

	Per Cent.		Per Cent.		Per Cent.
Needle-makers	70	Hairdressers	32	Masons	13
File-makers	63	Weavers	25	Millers	11
Lithographers	48	Painters	25	Brewers	11
Grinders	40	Printers	22	Tanners	9
Tobacconists	37	Shoemakers	19	Bakers	7
Watchmakers	37	Glaziers	18	Butchers	7
Stonecutters	36	Hatters	16	Charcoal-burners	2
Glassworkers	35	Carpenters	14	Miners	1

The above table has reference only to the U. Kingdom.

B.—Deaths from Consumption (Dr. Hirsch).

	Per 1000.		Per 1000.		Per 1000.
Glasgow	70	Boston	38	England	30
Philadelphia	56	New Orleans	37	Dresden	30
New York	53	London	37	Massachusetts	30
Edinburgh	48	Bavaria	37	Algiers	29
Paris	41	Copenhagen	34	St. Helena	22
Negroes	41	Malta	33	New Jersey	17

The above table includes only certain forms of consumption.

C.—Deaths from Consumption (1866).

	Per 1000.		Per 1000.
London	121	Paris	170
New York	142	Vienna	252

Digitized by Google

D.—Phthisis in United Kingdom.

Deaths per Million Inhabitants per Annum.

England . .	1850–59	2,730	Scotland . . .	1877	2,294
„ . .	1860–69	2,547	Ireland . . .	1880	2,135
„ . .	1870–79	2,205	London . . .	1879	2,476

PHYSICIANS.

A.

	Doctors and Surgeons.	Apothecaries and Midwives.	Total.	Doctors and Surgeons, per 100,000 Inhabitants.
England . .	15,920	...	...	64
Scotland . .	3,455	...	...	91
Ireland . . .	3,560	...	...	69
U. Kingdom	22,935	...	...	66
France . .	10,743	19,079	29,822	29
Germany .	32,000	...	...	70
Russia . .	13,475	6,752	20,227	18
Austria . .	10,000	...	...	27
Italy . .	9,400	...	...	33
Spain . .	5,200	...	...	31
Belgium . .	2,893	1,847	4,740	54
Scandinavia .	1,120	...	...	14
United States	65,000	...	...	122

The number of medical students in London in October 1882 was 949.

B.—Degrees of M.D. in France.

Years.	Number.	Years.	Number.
1801–14 . . .	3,178	1849–69 . . .	9,145
1815–30 . . .	6,423	1870–82 . . .	5,901
1831–48 . . .	8,468	82 years . . .	33,115

PIGEONS. See *Birds.*

PIGS.

A.—Pigs to Population.

	Thousands Omitted.		No. per 100 Inhab.	
	1855.	1880.	1855.	1880.
United Kingdom . .	2,810	3,190	10	9
Continent . . .	36,285	42,118	16	15
Europe . . .	39,095	45,308	15	14
United States . .	31,940	47,680	118	93
Total . .	71,035	92,988	25	25

Digitized by Google

B.—NUMBER AND SLAUGHTER (1880).

	Thousands Omitted.			Average Lbs. per Carcass.	Lbs. of Meat per Inhab.
	No. of Pigs.	Killed Yearly.	Meat, Tons.		
United Kingdom .	3,190	2,100	145	155	9
France	5,810	3,900	240	138	15
Germany	7,130	4,800	285	133	15
Russia	10,514	7,000	445	140	12
Austria	7,080	4,700	275	129	16
Italy	1,570	1,000	55	124	4
Spain and Portugal	5,323	3,600	130	81	14
Belg. and Holland	1,006	650	36	125	9
Scandinavia . . .	1,040	700	34	109	9
Switzerland . . .	335	200	10	112	8
Roumania, &c. . .	2,310	1,500	60	88	19
Europe	45,308	30,150	1,715	129	12
United States . .	47,680	32,000	1,420	100	60
Canada	1,425	900	45	112	23
Australia . . .	815	500	20	90	15
River Plate . . .	362	200	8	90	6
Cape Colony . .	164	100	4	90	8
Total . .	95,754	63,850	3,212	115	19

PILCHARDS.—The Cornishmen take 30 or 35 millions yearly; value, one shilling per 100. Exportation, 12,000 barrels.

PILGRIMS.—The number that passes through Suez *en route* for Mecca averages 35,000, of whom one-fourth are Turks, one-fourth Egyptians, the rest being Moors, &c.

PILOT-BOATS.

	Boats.	Pilots.
England	692	2,066
Scotland	226	432
Ireland	132	395
United Kingdom . .	1,050	2,893

The largest pilot-boat is only 45 tons.

PINS.—Great Britain makes 330 millions weekly, or 9 per inhabitant, as compared with 105 millions a week in 1840, or 4 per inhabitant.

Digitized by Google

PLAGUE.

A.—List of Plagues (Milroy).

	1501–1600.	1601–1700.	1701–1800.	1801–1841.
England	15	12	0	0
France	14	11	1	0
Germany	12	19	4	1
Low Countries	2	14	0	0
Russia and Scandinavia	2	7	4	2
Italy and Levant	26	15	12	11
Spain	5	3	3	1
Total	76	81	24	15

B.—Great Plague of 1346

Victims (Thousands Omitted).

Naples	60	Venice	70	Paris	50
Florence	100	Vienna	40	Strasburg	26
Sienna	70	Marseilles	56	London	100
Parma	40	Valencia	100	Norwich	50
Genoa	40	Avignon	60	Dublin	14

C.—Remarkable Plagues.

Date.	Place.	Deaths	Weeks.	Deaths per Week.
1656	Naples	380,000	28	10,400
1665	London	68,800	33	2,100
1720	Marseilles	39,100	36	1,100
1771	Moscow	87,800	32	2,700
1778	Constantinople	170,000	18	9,500
1798	Cairo	88,000	25	3,500
1812	Constantinople	144,000	13	11,100
1834	Cairo	57,000	18	3,200
1835	Alexandria	14,900	17	900
1871	Buenos Ayres	26,300	11	2,400

D.—Relative Mortality.

Date.	Place.	Died, per Cent.	Recovered, per Cent.	Authority.
1798	Cairo	67	33	Genettea.
1798	Aboukir	25	75	M'Grigor.
1813	Malta	50	50	Greaves.
1815	Corfu	91	9	White.
1834	Cairo	29	71	Gaetani.
1835	Alexandria	35	65	Clot Bey.
1871	Buenos Ayres	40	60	Bosch.

Digitized by Google

E.—Cholera.

	Deaths (Thousands Omitted).					
	1832.	1848.	1854.	1866.	1873.	Total.
Great Britain . .	53	55	22	18	...	148
France	103	134	146	44	63	490
Germany . . .	60	127	119	33	52	391
Austria . . .	99	145	218	220	436	1,118
Other countries . .	250	300	400	245	70	1,265
Total .	565	761	905	560	621	3,412

The death-ratio in 1832 averaged 38 to 40 per cent. of cases, but it was lower in subsequent visitations.

F.—Cholera of 1866.

Deaths per 10,000 *Inhabitants.*

London . .	18	Paris . . .	66	Madrid . .	102
Dublin . .	41	Berlin . .	83	Brussels . .	184
Vienna . .	51	Naples . .	89	Palermo . .	197
Marseilles . .	64	St. Petersburg .	98	Constantinople .	738

The greatest mortality was at Rome and Madrid on Sundays; at London and Berlin on Wednesdays; and at Paris on Saturdays. This cholera was more deadly in Italy than elsewhere, and worse than any previous visitations, 56 per cent. of all men, and 54 per cent. of women attacked, falling victims to it.

PLANETS.

	Miles Diameter.	Millions of Miles.		
		Mean Distance from Sun.	Least Distance from Earth.	Greatest Distance from Earth.
Mercury . .	2,962	35	47	136
Venus . . .	7,510	66	23	160
Earth . . .	7,901	91	...	...
Mars . . .	4,920	139	62	245
Jupiter . . .	85,390	476	409	592
Saturn . . .	71,904	872	831	1,014
Uranus . . .	33,024	1,753	1,746	1,929
Neptune . .	36,620	2,746	2,629	2,863

Digitized by Google

B.—Ratios of Size, Weight, &c.

	Size.	Weight.	Density.	Number of Days in Year.
Earth	100	100	100	365
Mercury	5	7	124	88
Venus	80	79	90	225
Mars	14	12	96	687
Jupiter	138,700	30,000	20	4,333
Saturn	74,600	9,000	12	10,759
Uranus	7,200	1,300	18	30,687
Neptune	9,400	1,700	17	60,127

PLATE.

A.—Quantity Stamped in United Kingdom.

Years.	Annual Average, Oz. Gold.	Silver.	Average Annual Value.	Per Inhab., Pence.
1801–10	5,680	1,087,000	£294,000	4½
1811–20	6,390	1,058,000	291,000	4
1821–30	6,814	1,157,000	317,000	4
1831–40	6,445	1,104,000	301,000	3
1841–50	7,333	1,007,000	281,000	2½
1851–60	38,415	930,000	373,000	3¼
1861–70	29,204	875,000	315,000	2½
1871–80	42,190	790,000	370,000	2¾

The sums received in payment of duty on gold and silver plate during the 10 years ending March 1882 were as follows:—

	10 Years.	1882.	Pence per Inhab. (1882).
England	£682,000	£66,830	0·64
Scotland	17,700	1,420	0·10
Ireland	5,100	460	0·02
United Kingdom	£704,800	£68,710	0·49

B.—Quantity Stamped in France.

Year.	Thousands Omitted. Gold, Oz.	Silver, Oz.	Value of Both.	Per Inhab., Pence.	Amount of Duties.	Per Inhab., Pence.
1830	101	1,739	£839	6	£52,000	0·36
1840	164	2,290	1,229	8½	77,000	0·52
1850	169	1,840	1,136	8	72,000	0·48
1860	288	2,294	1,611	11	121,000	0·75
1869	380	2,379	2,115	13	149,000	0·92
1878	409	2,456	2,251	14½	252,000	1·60

Digitized by Google

PLEBISCITES.—The principal in France have been as follows:—

Year.	For.	Against.
1793	1,801,000	12,000
1803	3,568,000	9,000
1815	1,302,000	4,000
1852	7,828,000	253,000
1870	7,336,000	1,561,000

POISON.—Deaths from accidental poisoning in England, in 1878, were 235 males and 118 females, apart from 215 cases of suicidal poisoning. The accidental were as 6 in 10,000 deaths.

POLICE.

A.—Cost in Cities.

	Thousands.	Per Inhab. Pence.		Thousands.	Per Inhab., Pence.
London . .	£1,060	68	Genoa . .	£15	21
Paris . .	1,160	122	Florence .	14	20
Vienna . .	390	99	Turin . .	13	18
Berlin . .	70	16	Antwerp .	13	19
S. Francisco	48	52	Trieste .	12	27
Buda . .	38	27	Christiania .	11	36
Rome . .	30	24	Frankfort .	7	14
Leipsic . .	24	49	Liege . .	6	12
Bucharest .	22	26	Venice . .	6	12
Stockholm .	21	33	Palermo .	6	6
Copenhagen	20	24	Stuttgart .	14	28

B.—Police of United Kingdom.

	Men.	Cost.	Per Man.	Police per 10,000 Inhab.	Cost per Inhab., Pence.
England . .	33,173	£3,440,000	£104	13	29
Scotland . .	3,562	320,000	90	10	21
Ireland . .	14,772	1,410,000	95	28	66
U. Kingdom	51,507	5,170,000	100	14	33

C.—London and Paris Compared.

	London.	Paris.	Per 10,000 Inhab. London.	Paris.
Number of men .	10,940	8,250	29	39
Arrests made . .	79,490	231,140	210	1,065

The London police cost £97 a year, the Paris £140, per man. The London man arrests 7 persons, the Paris 29 persons, per annum. For each offender (including drunkenness and misdemeanours), the police expenditure is £13 in London, and £5 in Paris.

Digitized by Google

POOR. See *Paupers, Taxes.*

POPES.

English . .	1	African . .	2	Syrian . .	8
Dutch . .	1	Austrian . .	2	Greek . .	14
Swiss . .	1	Spanish . .	5	French . .	15
Portuguese .	1	German . .	6	Italian . .	197

B.—Duration of Reign.

Over 20 years . . .	11	5 to 10 years . . .	57
10 to 20 ,, . . .	69	Under 5 ,, . . .	116

POPULATION.

A.

	Thousands Omitted.				
	1800.	1820.	1840.	1860.	1880.
U. Kingdom .	15,570	20,710	26,540	28,730	34,650
France . . .	27,720	30,380	34,102	37,290	37,430
Germany . .	22,330	26,040	30,590	36,410	45,260
Russia . . .	38,140	44,220	54,080	65,730	84,440
Austria . . .	21,230	23,620	28,170	32,240	37,830
Italy . . .	13,380	15,790	18,610	21,820	28,910
Spain . . .	10,440	11,680	11,820	15,560	16,290
Portugal . .	3,080	3,210	3,490	4,030	4,350
Belgium . .	2,960	3,280	4,020	4,690	5,480
Holland . .	2,280	2,510	3,130	3,620	4,060
Denmark . .	900	1,040	1,290	1,580	1,960
Sweden . . .	2,330	2,580	3,210	3,870	4,610
Norway . .	880	1,010	1,280	1,590	1,950
Switzerland .	1,820	2,040	2,310	2,530	2,810
Greece . . .	9,200	10,300	1,020	1,310	1,690
Servia . . .			12,490	1,240	1,920
Roumania . .				4,390	5,330
Turkey . . .			...	10,230	8,310
Europe . .	172,260	198,410	236,150	275,860	312,990
U. States . .	5,310	9,640	17,070	31,440	50,410
S. America .	20,000	22,000	23,500	24,800	25,600
British India .	70,000	83,000	98,500	143,300	191,400
Canada . . .	470	840	1,730	3,360	4,340
Australia . .	10	90	410	1,330	2,880
Cape Colony .	40	80	270	420	1,030
Total .	268,090	314,060	377,630	480,510	588,550

In the above table Lombardy is counted Italian, and Sleswig German, territory.

Digitized by Google

B.—Inhabitants per Square Mile.

	1800.	1820.	1840.	1860.	1880.
United Kingdom .	131	172	221	240	290
France . . .	135	148	165	175	180
Germany . .	108	124	145	174	217
Russia . . .	18	20	25	30	40
Austria. . .	90	99	118	134	158
Italy . . .	120	138	162	190	247
Spain . . .	51	58	59	78	82
Portugal . .	88	92	101	115	124
Belgium . .	260	287	348	409	480
Holland . .	177	195	228	260	312
Denmark . .	60	71	89	108	127
Sweden . .	14	15	19	23	27
Norway . .	7	8	11	13	15
Switzerland . .	114	127	145	160	175
Greece . . .	33	40	52	65	84
Turkey, &c. . .	70	80	100	120	120
Europe. . .	48	54	64	75	85
United States .	12	6	10	11	14
Canada. . .	...	...	...	...	1
Australia . .	...	...	...	...	1
Cape Colony. .	...	1	2	3	4
British India .	150	161	197	158	210
South America	3	3	3	3	3

C.—United Kingdom.

Year.	Thousands Omitted.			Inhabitants per Square Mile.		
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.
1066 . .	2,150	350	1,000	37	11	32
1381 . .	2,360	400	1,100	41	13	35
1528 . .	4,356	550	770	75	17	24
1672 . .	5,500	900	1,320	96	29	41
1712 . .	6,280	1,050	2,099	110	34	66
1754 . .	7,020	1,265	2,373	120	40	74
1780 . .	8,080	1,430	3,050	140	47	96
1801 . .	8,893	1,608	5,216	155	53	165
1811 . .	10,164	1,806	5,957	175	60	189
1821 . .	12,090	2,092	6,802	207	68	212
1831 . .	14,001	2,364	7,768	241	77	243
1841 . .	16,038	2,620	8,195	275	86	256
1851 . .	18,071	2,889	6,552	310	94	205
1861 . .	20,202	3,062	5,800	347	100	181
1871 . .	22,905	3,366	5,387	391	110	169
1881 . .	26,110	3,734	5,160	443	122	161

Digitized by Google

D.—England, Urban and Rural.

	Rural.	Urban.	Total.	Rural Ratio, per Cent.
1851 . .	8,772,000	9,156,000	17,928,000	49·0
1861 . .	9,133,000	10,933,000	20,066,000	45·5
1871 . .	9,802,000	12,911,000	22,713,000	43·2
1881 . .	10,523,000	15,445,000	25,968,000	40·4

E.—Towns of England.

	Population in Thousands.				
	1801.	1821.	1841.	1861.	1881.
London . .	959	1,379	1,948	2,804	3,815
Liverpool . .	82	138	286	444	552
Manchester . .	77	129	243	358	549
Birmingham . .	71	102	183	296	402
Leeds . . .	53	84	152	207	309
Sheffield . .	46	65	111	185	284
Bristol . . .	61	85	125	154	207
Nottingham . .	29	40	52	75	187
Bradford . .	13	26	67	106	184
Hull . . .	30	45	67	97	155
Newcastle . .	33	42	70	109	145
Brighton . .	7	25	49	87	108
	1,461	2,160	3,353	4,922	6,897
Rest of England .	7,432	9,930	12,685	15,280	19,213
Total population	8,893	12,090	16,038	20,202	26,110
Ratio of 12 towns .	16 p. c.	18 p. c.	21 p. c.	24 p. c.	26 p. c.

F.—United States.

Year.	Thousands Omitted.					
	New England.	Middle.	Southern.	Western.	Pacific.	Total.
1790 . . .	1,010	1,342	1,580	...	...	3,932
1800 . . .	1,233	1,807	2,214	54	...	5,308
1810 . . .	1,472	2,479	2,997	292	...	7,240
1820 . . .	1,659	3,194	3,932	849	...	9,634
1830 . . .	1,954	4,138	5,164	1,610	...	12,866
1840 . . .	2,236	5,088	6,367	3,378	...	17,069
1850 . . .	2,724	6,593	8,288	5,409	178	23,192
1860 . . .	3,145	8,294	10,297	9,222	485	31,443
1870 . . .	3,506	9,770	11,330	13,188	764	38,558
1880 . . .	4,010	12,375	15,254	17,509	1,262	50,410

Digitized by Google

G.—The United States in Detail.

	Thousands Omitted.					
	1800.	1820.	1840.	1860.	1870.	1880.
New York	589	1,372	2,429	3,881	4,383	5,083
Pennsylvania	602	1,048	1,724	2,906	3,522	4,283
Ohio	45	581	1,519	2,340	2,665	3,198
Illinois	...	55	476	1,712	2,540	3,078
Missouri	...	67	384	1,182	1,721	2,168
Indiana	6	147	686	1,350	1,681	1,978
Massachusetts	423	523	738	1,231	1,457	1,783
Kentucky	221	564	780	1,156	1,321	1,649
Michigan	...	9	212	749	1,184	1,637
Iowa	...	...	43	675	1,194	1,625
Texas	...	...	...	604	819	1,592
Tennessee	106	423	829	1,110	1,259	1,542
Georgia	163	341	691	1,057	1,184	1,542
Virginia	880	1,065	1,240	1,596	1,225	1,513
North Carolina	478	639	753	993	1,071	1,399
Wisconsin	...	...	31	776	1,055	1,315
Alabama	...	128	591	964	997	1,263
Mississippi	9	75	376	791	828	1,132
New Jersey	211	277	373	672	906	1,131
Kansas	...	...	...	107	364	996
South Carolina	346	503	594	704	706	996
Louisiana	...	153	352	708	727	940
Maryland	342	407	470	687	781	935
California	...	...	...	380	560	865
Arkansas	...	14	98	435	484	803
Minnesota	...	...	...	172	440	781
Maine	152	298	502	628	627	649
Connecticut	251	275	310	460	537	623
West Virginia	...	...	...	...	442	618
Nebraska	...	...	...	29	123	452
New Hampshire	184	244	285	326	318	347
Vermont	154	236	292	315	331	332
Rhode Island	69	83	109	175	217	277
Delaware	64	73	78	112	125	147
Florida	...	...	54	140	188	269
Colorado	...	...	...	34	40	194
Oregon	...	...	...	52	91	175
Utah	...	...	...	40	87	144
Dakota	...	...	...	5	14	135
Territories	13	33	50	189	344	567
The Union	5,308	9,638	17,069	31,443	38,558	50,156

The increase of population since 1830 (see p. 361) has averaged 32 per cent. every 10 years. At this rate there will be 88 millions in 1900.

Digitized by Google

H.—Great Towns in 1831 and 1881.

Thousands Omitted.

	1831.	1881.		1831.	1881.
Amsterdam	201	326	London	1,655	3,815
Antwerp	65	182	Lyons	146	377
Belfast	53	185	Madrid	205	396
Berlin	220	1,129	Manchester	238	549
Birmingham	142	402	Manilla	134	270
Bombay	229	644	Marseilles	116	360
Bordeaux	94	212	Milan	125	321
Boston	61	363	Moscow	308	694
Brussels	102	407	Munich	65	230
Buda	67	370	Naples	354	491
Buenos Ayres	81	212	New Orleans	46	216
Cairo	333	315	New York	203	1,243
Calcutta	280	430	Palermo	168	245
Constantinople	590	819	Philadelphia	167	838
Copenhagen	109	235	Prague	85	159
Christiania	21	120	Rio Janeiro	145	275
Dresden	70	221	Rome	128	301
Dublin	227	350	Rotterdam	66	153
Edinburgh	130	229	St. Petersburg	324	703
Florence	82	168	Smyrna	115	155
Genoa	83	179	Stockholm	79	153
Glasgow	164	572	Stuttgart	32	117
Hamburg	112	454	Turin	114	241
Havana	111	230	Tunis	108	210
Leipsic	42	149	Venice	110	112
Lisbon	202	224	Vienna	280	731
Liverpool	165	552	Warsaw	151	318

See *Cities.*

I.—Towns of France.

	Population in Thousands.			Ratio to Pop. of France.		
	1801.	1835.	1881.	1801.	1835.	1881.
Paris	553	881	2,226	2·0	2·6	5·9
Lyons	110	162	377	0·4	0·5	1·0
Marseilles	111	125	360	0·4	0·4	1·0
Bordeaux	91	110	212	0·3	0·3	0·6
Lille	55	77	178	0·2	0·2	0·5
Toulouse	50	62	140	0·2	0·2	0·4
Nantes	42	78	124	0·2	0·2	0·3
Rouen	48	91	106	0·2	0·3	0·3
Havre	16	24	106	0·1	0·1	0·3
Total	1,076	1,610	3,829	4·0	4·8	10·3

Digitized by Google

K.—Increase of Population in United States.

	Natural.	Immigration.	Total, per Cent.
1831–40 . . .	28·02	4·65	32·67
1841–50 . . .	26·19	9·68	35·87
1851–60 . . .	24·20	11·38	35·58
1861–70 . . .	15·38	7·25	22·63
1871–80 . . .	22·78	7·29	30·07

L.—Towns over 20,000 Population.

	Number of Towns.	Thousands Omitted.		Urban, Ratio per Cent.	Towns per 10,000 sq. miles.
		Town Pop.	Total Pop.		
England . . .	101	11,420	26,110	44	17
Scotland . . .	10	1,310	3,734	35	3
Ireland . . .	9	820	5,160	16	3
U. Kingdom	120	13,550	35,004	39	10
France . . .	91	6,810	37,670	18	5
Germany . .	114	7,420	45,260	16	5
Russia . . .	88	5,220	84,440	6	0·4
Austria . . .	37	2,550	37,830	7	1·3
Italy	76	4,570	28,910	16	7
Spain	28	1,940	16,270	12	1·5
Portugal . . .	3	420	4,350	10	1
Belgium . . .	24	1,510	5,480	27	22
Holland . . .	19	1,140	4,060	28	10
Denmark . .	2	260	1,960	13	1·3
Sweden . . .	6	350	4,610	8	0·4
Norway . . .	5	210	1,940	11	0·4
Switzerland .	6	230	2,810	8	4
Greece . . .	4	100	1,690	6	2
Roumania . .	12	620	5,340	11	2
Servia . . .	1	270	1,720	6	0·5
Turkey . . .	4	960	8,040	12	0·7
Europe . .	640	48,130	327,404	15	1·6
United States	102	9,160	50,310	18	0·3
Canada . . .	9	370	4,340	9	...
Australia . .	16	710	2,880	25	...
Total . .	767	58,370	384,934	15	0·5

The above does not include all urban population: for example, see England in Table E.

Digitized by Google

M.—Towns in United States.

Population.	1800.	1820.	1840.	1860.	1880.
Over 100,000 . .	0	2	4	9	20
50 to 100,000 . .	2	1	1	9	16
20 to 50,000 . .	2	2	16	25	66
Total . . .	4	5	21	43	102

The aggregate of urban compared with total population in the United States was as follows:—

	Thousands Omitted.		Ratio of
	Urban.	Total.	Urban.
1800 . . .	340	5,310	6·4
1820 . . .	460	9,640	4·8
1840 . . .	1,550	17,070	9·1
1860 . . .	4,240	31,440	13·5
1880 . . .	9,160	50,310	18·2

The urban class comprises only towns over 20,000 population.

N.—Great Powers of Europe.

	Thousands Omitted.					
	1880.	1480.	1580.	1680.	1780.	1880.
England . . .	2,360	3,700	4,600	5,532	9,561	35,004
France . . .	11,240	12,600	14,300	18,800	25,100	37,400
Prussia . . .	600	800	1,000	1,400	5,460	45,260
Russia . . .	1,200	2,100	4,300	12,600	26,800	84,440
Austria . . .	2,300	9,500	16,500	14,000	20,200	37,830
Italy	8,400	9,200	10,400	11,500	12,800	28,910
Spain	7,500	8,800	8,150	9,200	9,960	16,290
Total . .	33,600	46,700	59,250	73,032	109,881	285,134

In the above, England at present stands for United Kingdom, and Prussia for the German Empire.

O.—Density of English Towns.

Inhabitants per Acre.

Norwich . . . 12	Bradford . . . 28	Bristol 49
Leeds 15	Portsmouth . . 31	London 49
Sheffield . . . 16	Leicester . . . 42	Plymouth . . . 54
Nottingham . . 18	Hull 42	Manchester . . 85
Oldham . . . 26	Birmingham . . 48	Liverpool . . . 106

Digitized by Google

P.—Early Towns of England (A.D. 1377).

London . .	35,200	Norwich . .	6,300	Newcastle . .	4,300
York . . .	11,400	Lincoln . .	5,500	Oxford . . .	3,800
Bristol. . .	9,200	Lynn . . .	5,200	Gloucester . .	3,400
Plymouth .	7,300	Canterbury .	4,700	Leicester . .	3,200
Coventry . .	7,100	Colchester .	4,500	Shrewsbury .	3,000

PORTS.

A.—Tonnage of Entries.

Thousands Omitted.

London. . .	8,210	Hamburg. .	2,315	Hull	2,010
New York. .	7,506	Havre . . .	2,260	Genoa . . .	1,640
Liverpool . .	7,320	Glasgow . .	2,170	Boston . . .	1,560
Marseilles . .	3,260	Dublin . .	2,120	Baltimore . .	1,365
Antwerp . .	2,720	Belfast . .	2,030	Philadelphia .	1,260

B.—Foreign Trade of British Ports (1880).

	Millions £.			
	Imports.	Exports.	Total.	Ratio.
London . .	141	53	194	27·7
Liverpool . .	107	84	191	27·3
Hull . . .	20	19	39	5·6
Glasgow . .	12	12	24	3·4
Southampton . .	10	9	19	2·7
Tyne ports . .	7	7	14	2·0
Leith . . .	9	3	12	1·7
Bristol . . .	8	2	10	1·5
Cardiff . . .	1	5	6	0·9
Dublin . . .	1	2	3	0·5
Belfast . . .	1	2	3	0·5
Various . . .	94	89	183	26·2
Total . .	411	287	698	100·0

C.—Trade of United States Ports.

	Millions £.			Ratio.		
	Imports.	Exports.	Total.	Imports.	Exports.	Total.
New York . .	103	69	172	68	45	57
Boston . . .	14	13	27	10	8	9
San Francisco .	9	11	20	6	7	6½
New Orleans .	3	14	17	2	10	6
Philadelphia .	7	8	15	5	5	5
Baltimore . .	3	8	11	2	5	3½
Various . . .	12	29	41	7	20	13
Total . . .	151	152	303	100	100	100

Digitized by Google

POST-OFFICE.

A.—Correspondence in 1881.

	Millions. Letters.	Papers.	Sundries.	Total.	Per Inhab.
United Kingdom	1,299	134	249	1,682	49
France	595	354	401	1,350	36
Germany	721	452	126	1,299	29
Russia	110	75	7	192	2
Austria	483	79	37	599	16
Italy	196	86	77	359	13
Spain	71	41	6	118	7
Portugal	16	8	2	26	6
Belgium	91	69	37	197	36
Holland	71	35	14	120	30
Denmark	25	26	2	53	27
Sweden and Norway	46	33	2	81	12
Switzerland	65	50	15	130	46
Greece	3	...	1	4	2
Roumania	6	2	...	8	2
Europe	3,798	1,444	976	6,218	20
United States	1,155	761	327	2,243	45
Canada	57	15	7	79	18
Australia	36	36	1	73	27
India	121	10	4	135	1
Japan	48	14	1	63	2
South America	36	9	9	54	2
Algeria	7	1	...	8	3
Egypt	3	1	...	4	1
Java	4	1	1	6	1
The World	5,265	2,292	1,326	8,883	13

B.—Letters in France and United Kingdom.

Period.	Annual Average, Millions. U. Kingdom.	France.	Number per Inhabitant. U. Kingdom.	France.
1841–50	277	122	10	4
1851–60	466	210	17	6
1861–70	724	340	24	9
1881	1,299	595	37	16

C.—British Postal Revenue.

Year.	Amount, Thousands £.	Per Inhab., Pence.	Year.	Amount, Thousands £.	Per Inhab., Pence.
1643	5	...	1744	235	7
1663	22	1	1790	480	12
1685	65	3	1835	2,353	22
1707	111	5	1881	9,028	62

Digitized by Google

D.—British Postal Traffic.

	Millions of Letters, Papers, &c.			Ratio.
	Received from	Sent to	Total.	
United Kingdom	1,526	1,526	1,526	90·7
America	22	22	44	2·6
European Continent	37	44	81	4·8
The East	4	9	13	0·8
Australia	4	6	10	0·6
Africa	2	6	8	0·5
Total	1,595	1,613	1,682	100·0

E.—British Postal Tariff.

	Pence.				Pence.		
London to	1645.	1835.	1881.	London to	1645.	1835.	1881.
York	6	11	1	New York	...	26	2½
Edinburgh	8	13	1	Madrid	...	26	2½
Dublin	...	16	1	Rio Janeiro	...	42	4
Gibraltar	...	34	2½				

In the reign of Charles I. the rates of postage were :—

	Pence.		Pence.
Under 80 miles	2	Over 140 miles	6
80–140	4	To Scotland	8

POTATOES.

	Thousands Omitted.			Cwts. per Acre.	Lbs. per Inhab.
	Acres.	Tons.	Value of Crop, £.		
England	400	1,400	4,600	70	120
Scotland	189	665	2,200	70	390
Ireland	854	2,970	9,400	70	1,320
United Kingdom	1,443	5,035	16,200	70	315
France	3,200	9,500	28,300	59	550
Germany	6,800	21,300	57,500	62	1,060
Russia	3,100	9,200	22,300	60	250
Austria	3,500	8,100	20,200	46	510
Italy and Spain	450	1,120	3,000	50	55
Holl. and Belgium	750	2,800	8,100	75	580
Scandinavia	560	1,750	5,000	64	460
Europe	19,803	58,805	160,600	60	450
United States	1,900	3,500	10,600	37	150
Canada, &c.	1,100	3,300	9,400	60	...
Total	22,803	65,605	180,600	57	...

Potatoes were introduced into Germany in 1710, into

Digitized by Google

Russia in 1769, and into Scotland some years later. The man who sowed the first field of potatoes in Scotland died in 1850.

POULTRY.

A.

	Millions.	Per 100 Inhab.		Millions.	Per 100 Inhab.
Great Britain . .	28	94	France	87	230
Ireland	13	255	Germany . . .	63	140
United Kingdom .	41	117	Italy	32	110

B.—British Poultry.

	Thousands Omitted.		Thousands Omitted.
Hens	23,500	Geese . . .	6,500
Ducks . . .	8,700	Turkeys . .	2,400

See *Hens*.

POWER.

A.—Power Available for Industries.

	Thousands.					Ratio.
	Human Workers.	Horses.	Steam, Horse-power.	Rivers, Horse-power.	Total Horse-power.	
U. Kingdom .	22,570	2,906	7,780	4,520	17,466	7·5
France . . .	27,765	2,833	3,513	6,130	15,253	6·6
Germany . .	30,074	3,360	4,325	6,040	16,735	7·2
Russia . . .	49,520	16,200	1,365	36,115	58,630	25·0
Austria . .	25,008	3,760	1,280	5,830	13,370	5·7
Italy . . .	18,310	658	480	3,960	6,929	2·9
Spain . . .	11,120	590	483	2,220	4,405	1·8
Portugal . .	2,780	70	66	640	1,054	0·5
Belgium . .	3,776	283	595	370	1,626	0·7
Holland . .	2,690	280	216	640	1,405	0·6
Scandinavia .	5,810	970	416	6,360	8,327	3·6
Switzerland .	1,815	110	253	650	1,195	0·5
Roumania . .	3,520	550	90	1,160	2,152	0·9
Servia . . .	1,070	140	35	450	732	0·3
Greece . . .	1,020	97	20	420	640	0·2
Europe . .	206,848	32,807	20,917	75,505	149,919	64·0
United States	30,116	11,202	8,152	61,150	83,516	36·0
Total . .	236,964	44,009	29,069	136,655	233,435	100·0

All the above powers may be considered in active use, except the rivers, of which less than one-tenth of the power is turned to any use.

Digitized by Google

B.—Relative Distribution of Power.

	Human.	Horses.	Steam.	Rivers.	Total.	Horse-power per Square Mile.
U. Kingdom	13	17	44	26	100	145
France	18	19	23	40	100	76
Germany	18	20	26	36	100	79
Russia	8	26	2	64	100	25
Austria	18	27	9	46	100	49
Italy	26	9	7	58	100	61
Spain	25	13	11	51	100	25
Portugal	27	7	6	60	100	29
Belgium	23	18	36	23	100	142
Holland	19	20	15	46	100	70
Scandinavian	7	12	5	76	100	27
Switzerland	15	10	21	54	100	75
Roumania	17	25	4	54	100	44
Servia	15	20	5	60	100	36
Greece	15	15	3	67	100	32
Europe	14	22	14	50	100	38
United States	4	13	10	73	100	23

PRESS.

A.—Newspapers of all Languages.

English	13,378	Italian	1,165	Portuguese	310
German	3,333	Spanish	1,140	Russian	170
French	1,810	Hindoo	590	Various	1,443

Total . . . 23,339.

B.—Daily Papers.

	Number.	Daily Issue.	Copies per 1000 Inhab.
United Kingdom	169	3,200,000	89
France	128	2,300,000	60
Germany	560	2,500,000	54
Italy	105	600,000	21
Belgium and Holland	94	400,000	37
Spain, Russia, &c.	250	600,000	5
Europe	1,306	9,600,000	30
United States	962	3,600,000	70
Spanish America	115	400,000	13
India, Colonies, &c.	162	700,000	3
The World	2,545	14,300,000	22

C.—Press of United Kingdom.

	Dailies.	Weeklies, &c.	Total.
London	15	360	375
Provinces	116	987	1,103
Scotland	22	161	183
Ireland	16	140	156
United Kingdom	169	1,648	1,817

Digitized by Google

D.—Growth of Newspapers since 1840.

	No. of Papers. 1840.	No. of Papers. 1882.	No. of Towns in 1882.	Newspapers per Town.	Date of First Paper, A.D.
United Kingdom	493	1,817	120	15	1622
France . .	776	1,230	91	14	1605
Germany . .	305	2,350	114	21	1524
Russia . .	204	436	88	5	1714
Austria . .	132	865	37	23	1550
Italy . . .	210	1,124	76	15	1562
Spain . . .	74	258	28	9	1704
Portugal . .	18	42	3	14	...
Belgium . .	52	412	24	17	1764
Holland . .	26	210	19	11	1757
Scandinavia .	104	230	13	18	1644
Switzerland .	54	434	6	72	...
Europe . .	2,448	9,408	619	15	1524
United States .	830	11,052	102	101	1704
Spanish America	88	870	74	12	1728
Brazil . .	11	296	20	15	1780
Australia . .	43	270	16	17	1803
Canada . .	88	565	9	62	1765
India . . .	63	644	180	4	1781
West Indies .	37	60	10	6	1731
Sandwich Islands	1	6	1	6	1835
Africa . .	14	62	12	5	1824
Japan . .	1	34	30	1	...
Turkey, &c. .	14	72	17	4	1797
Total . .	3,638	23,339	1,093	21	1524

The Chinese have had newspapers at least ten centuries.

In the above table only towns of over 20,000 population are counted. The increase of newspapers in Europe has been as follows:—

Year.	Number.	Per Million Inhab.	Year.	Number.	Per Million Inhab.
1828 . .	2,142	10·2	1865 . .	7,140	26·4
1840 . .	2,448	10·7	1882 . .	9,408	31·2

E.—British Press since 1800.

	Million Papers per Annum. 1801.	1831.	1864.	1882.	Annual Issue per 100 Inhabitants, Copies. 1801.	1831.	1864.	1882.
England . .	16	33	482	1,350	180	230	2,250	5,120
Ireland . .	2	4	36	130	38	52	640	2,540
Scotland . .	1	2	28	140	60	84	950	3,760
U. Kingdom	19	39	546	1,620	122	164	1,810	4,450

Digitized by Google

F.—French Daily Press.

	Thousands Daily.	Copies per 1000 Inhab.
Paris	1,470	630
Lyons	73	190
Marseilles	70	194
Bordeaux	40	188
Other towns	647	...
France	2,300	60

G.—United States Daily Press.

States.	No. of Papers.		Issue, Thousands.		Copies per 1000 Inhabitants.	
	1870.	1880.	1870.	1880.	1870.	1880.
New England	60	84	310	403	89	101
Middle	171	259	1,369	1,799	140	146
Southern	82	122	146	174	12	12
Western	206	381	633	970	49	55
Pacific	55	116	143	246	186	195
Total	574	962	2,601	3,592	69	71

H.—Literature: Newspapers and Books.

	Per Annum. Paper, Tons Used.	Lbs. per Inhab.	Expenditure, Books and Papers.	Average per Inhab., Pence.
United Kingdom	95,000	6·1	£16,060,000	107
France	70,000	4·2	11,750,000	75
Germany	76,000	3·7	12,720,000	67
Russia	18,000	0·5	3,040,000	9
Austria	24,000	1·4	4,050,000	25
Italy	19,000	1·5	3,200,000	26
Spain	6,000	0·8	1,010,000	15
Portugal	2,000	1·0	340,000	18
Belgium	8,000	3·3	1,350,000	59
Holland	3,600	2·1	610,000	38
Scandinavia	6,000	1·5	1,010,000	30
Switzerland	4,000	3·3	670,000	58
Europe	331,600	2·4	£55,810,000	44
United States	107,000	4·7	18,080,000	76
Canada	4,000	2·2	670,000	39
Australia	4,000	3·3	670,000	58
Spanish America	10,000	0·7	1,680,000	14
India, &c.	4,400	...	740,000	...
The World	461,000	...	£77,650,000	...

Digitized by Google

PRICES.

A.—Roman Empire, A.D. 303.

Prices in English Pence and English Measure.

Wines, &c.	Per Pint.
Falernian	15
Sorrento	15
Sabine	15
Ordinary	10
Inferior	8
Rustic	4
Vinegar	3
Beer	2
Small do.	1
Oil, 1st	20
Do., 2nd	12
Do., 3rd	6

Meat, &c.	Per Lb.
Beef	4
Mutton	4
Lamb	6
Pork	6
Ham	10
Sausages	4
Venison	7
Boar	9
Sea fish	14
River fish	7
Salted „	4
Snails, dozen	1

Game.	Per Head.
Grouse	15
Dove	12
Pigeon	18
Wood do.	15
Partridge	24
Duck	30
Rabbit	30
Fowl	45
Goose	75
Fat do.	150
Pheasant	80
Hare	110

Groceries.	Per Lb.
Tallow	3
Cheese	7
Butter	9
Lard	9
Honey	12
Beans	5
Peas	3
Lentils	5
20 eggs	15
20 oysters	15
20 figs	2
20 roses	1

Vegetables, &c.	Per 20.
Apples	2
Cherries	1
Almonds	½
Walnuts	1
Chestnuts	1
Onions	4
Turnips	8
Cucumbers	8
Lettuce	15
Cauliflowers	15
Melons	30
Artichokes	30

Clothing, &c.	Pence.
Socks	3
Tunic	12
Breeches	15
Cloak	30
Boots	100
Shoes	120
Slippers	50
Clogs	40
Saddle	400
Bridle	80
Whip	12
Bath	2

B.—Prices in England since A.D. 1201.

	Nominal, in Current Coin, Centuries.						
	13th.	14th.	15th.	16th.	17th.	18th.	19th.
Ox	13s.	16s.	20s.	31s.	100s.	160s.	280s.
Sheep	1s.	1½s.	2s.	3s.	7s.	18s.	25s.
Pig	2s.	3s.	3s.	4s.	8s.	22s.	30s.
Wine, gallon	1s.	1s.	1s.	3s.	5s.	16s.	20s.
Beer, „	1d.	2d.	2d.	3d.	4d.	8d.	18d.
Goose	3d.	4d.	6d.	8d.	12d.	24d.	50d.
Rabbit	2d.	2d.	3d.	3d.	6d.	8d.	12d.
Hen	1d.	2d.	3d.	4d.	8d.	12d.	18d.
Pigeons, dozen	3d.	4d.	6d.	9d.	12d.	18d.	36d.
Beef, 8 lbs.	2d.	4d.	5d.	6d.	24d.	36d.	64d.
Eggs, dozen	1d.	2d.	3d.	3d.	4d.	8d.	12d.
Butter, lb.	...	1½d.	1½d.	2d.	4d.	5d.	12d.
Wheat, quarter	...	6s.	6s.	16s.	42s.	50s.	56s.
Horse	...	...	£2	£3	£5	£13	£22

Digitized by Google

PRICES IN ENGLAND SINCE A.D. 1201—*continued.*

Actual Price in Weight of Silver.

Ox	43s.	45s.	42s.	40s.	106s.	170s.	280s.
Cow	30s.	35s.	30s.	30s.	80s.	100s.	200s.
Horse	...	...	84s.	80s.	106s.	275s.	440s.
Sheep	3s.	4½s.	4s.	4s.	8s.	19s.	25s.
Pig	6s.	9s.	6s.	6s.	9s.	23s.	30s.
Wheat, quarter	...	16s.	12s.	21s.	45s.	53s.	56s.
Wine, gallon	3s.	3s.	2s.	4s.	6s.	17s.	20s.
Beer, „	3d.	5d.	4d.	4d.	4d.	8d.	18d.
Goose	9d.	12d.	12d.	11d.	12d.	25d.	50d.
Rabbit	6d.	6d.	6d.	4d.	6d.	8d.	12d.
Hen	3d.	6d.	6d.	5d.	9d.	12d.	18d.
Pigeons, dozen	9d.	12d.	12d.	12d.	13d.	18d.	36d.
Beef, 8 lbs.	6d.	12d.	10d.	8d.	25d.	38d.	64d.
Butter, lb.	...	4d.	3d.	3d.	4d.	5d.	12d.
Eggs, dozen	3d.	6d.	6d.	4d.	4d.	8d.	12d.

C.—RISE OF PRICES IN ENGLAND (RATIO OF VALUE).

A.D.	Nominal Value.			Coined Silver, per Lb.	Value in Silver.		
	Grain.	Cattle.	Labour.		Grain.	Cattle.	Labour.
1201–1300	10	5	15	20s.	33	16	50
1301–1400	11	7	20	23s.	32	20	57
1401–1500	11	9	22	32s.	23	19	45
1501–1600	32	13	22	52s.	41	16	29
1601–1700	80	30	33	62s.	85	32	35
1701–1765	70	45	40	62s.	74	48	43
1766–1810	106	53	55	62s.	112	56	58
1811–1848	121	70	70	66s.	121	70	70
1880–1883	100	100	100	66s.	100	100	100

The foregoing shows that cattle, for example, sell to-day at 20 times the nominal price, but only 6 times the weight in silver, which they were worth in the 13th century. Shuckburgh's table (1800) was manifestly erroneous, since prices had nominally increased only 7-fold from 1200 to 1800.

A.D.	Ratio of Value. Nominal.	Real.	Shuckburgh.	Rise of Eng. Population.
1201–1300	10	33	11	8
1301–1400	13	37	14	9
1401–1500	14	29	16	14
1501–1600	22	29	20	18
1601–1700	48	51	35	21
1701–1765	52	55	58	24
1766–1810	71	75	100	35
1880–1883	100	100	...	100

Digitized by Google

D.—Prices in England from 1780 to 1850.

	1780-1800.	1801-20.	1821-50.	Ratio. 1780-1800.	Ratio. 1821-50
Wheat, qr. .	56s.	86s.	57s.	100	102
Butter, cwt. .	63s.	90s.	78s.	100	124
Beef „ .	47s.	65s.	57s.	100	121
Sugar „ .	42s.	46s.	35s.	100	83
Iron „ .	18s.	12s.	6s.	100	33
Coffee „ .	112s.	126s.	90s.	100	89
Cotton „ .	178s.	149s.	70s.	100	39
Wool „ .	140s.	210s.	110s.	100	79
Tea, lb. . .	42d.	38d.	24d.	100	57
Total				900	727

E.—"Economist" Scale of Prices since 1850.

Taking the aggregate of 22 articles in 1845–50 as 100, the fluctuations of prices give the following result:—

1857 . .	136·2	1872 . .	128·9	1878 . .	114·9
1858 . .	118·7	1873 . .	133·9	1879 . .	100·1
1866 . .	161·8	1874 . .	131·4	1880 . .	115·4
1867 . .	137·4	1875 . .	126·3	1881 . .	108·0
1870 . .	122·2	1876 . .	123·2	1882 . .	110·7
1871 . .	117·7	1877 . .	123·8	1883 . .	106·5

	1845–50.	1883.		1845–50.	1883.
Coffee . .	100	82	Meat . .	100	145
Copper . .	100	80	Silk . .	100	126
Cotton . .	100	89	Sugar . .	100	60
„ cloth .	100	92	Tallow . .	100	111
Flax . .	100	68	Tea . .	100	76
Iron . .	100	79	Timber . .	100	108
Lead . .	100	83	Wheat . .	100	77
Leather . .	100	139	Yarn (cotton)	100	100

The aggregate or general average for 1883 is 6½ per cent. (say 15 pence in the £) over 1845–50.

F.—Ancient Rome and Modern London.

	Rome, A.D. 303. Pence.	London, 1883, Pence.		Rome, A.D. 303, Pence.	London, 1883, Pence.
Beer, pint .	2	3	Cheese, lb. .	7	10
Wine, „ .	15	24	Rabbit . .	30	20
Oil „ .	20	24	Duck . .	30	36
Eggs, dozen .	9	12	Goose . .	150	80
Fish, lb. .	12	12	Pheasant .	80	84
Sausages, lb. .	14	16	Grouse . .	15	36
Beef „ .	4	10	Partridge .	24	24
Butter „ .	9	20	Hare . .	110	48

See *Wheat, Butter, Meat, Consols,* &c.

Digitized by Google

G.—Prices in England since 1854.

		1854-60.	1861-70.	1871-80.	1881.	Ratio.	
						1854-60.	1881.
Bacon, cwt.	s.	51	49	45	46	100	90
Barley, bushel	d.	37	43	50	50	100	135
Butter, cwt.	s.	84	104	110	106	100	126
Carpets, yard	d.	31	35	35	29	100	93
Cheese, cwt.	s.	51	56	56	57	100	112
Cloth, yard	d.	36	36	37	33	100	92
Coals, ton	d.	111	118	149	108	100	97
Coffee, cwt.	s.	49	64	88	77	100	157
Cotton, raw	s.	61	148	66	58	100	95
Cotton cloth, 100 yds.	d.	29	42	30	27	100	93
Eggs, 12 dozen	d.	82	88	114	106	100	129
Flannel, yard	d.	16	19	18	15	100	94
Flax, cwt.	s.	47	55	49	41	100	87
Glass „	s.	62	55	54	44	100	71
Herrings, barrel	s.	26	27	28	35	100	135
Hides, cwt.	s.	66	59	82	86	100	130
Horses, each	£	56	52	64	62	100	111
Iron, ton	s.	66	59	74	55	100	83
Jute, cwt.	s.	18	19	17	16	100	89
Lard „	s.	58	56	47	51	100	88
Lead, ton	£	22	21	21	16	100	73
Leather, cwt.	s.	176	185	164	161	100	91
Linen, 100 yards	d.	73	76	73	70	100	96
Oats, bushel	d.	35	40	46	44	100	126
Oil, tun	£	53	58	46	41	100	85
Oranges, bushel	s.	12	11	9	8	100	67
Oxen, each	£	16	18	21	22	100	137
Paper, cwt.	s.	85	63	49	45	100	53
Potatoes, „	d.	50	67	66	65	100	130
Rice „	s.	12	12	10	9	100	75
Salt, ton	d.	130	126	158	140	100	108
Sheep, each	s.	41	39	45	47	100	115
Silk, lb.	s.	18	23	19	17	100	95
Soap, cwt.	s.	24	26	25	22	100	92
Spirits, gallon	d.	45	31	49	67	100	149
Steel, ton	£	35	33	32	11	100	32
Sugar, cwt.	s.	32	33	26	24	100	75
Tallow „	s.	55	45	40	35	100	63
Tea, lb.	d.	17	18	16	13	100	76
Tobacco, cwt.	s.	91	104	73	64	100	70
Wheat, bushel	d.	81	78	71	66	100	82
Wine, gallon	d.	133	67	88	71	100	53
Wood, load	s.	64	63	56	51	100	80
Wool, lb.	d.	21	18	14	14	100	67
Total		...	...	...	...	4,400	4,197

Digitized by Google

H.—Prices (England).

		1861.	1873.	1882.	Ratio.		
					1861.	1873.	1882.
Alkali	. .	s. 8·52	12·32	6·14	100	145	72
Beer	. .	s. 74·58	82·81	85·50	100	110	114
Books	. .	£ 14·43	10·88	9·62	100	76	67
Boots	. .	s. 73·11	64·73	58·70	100	89	80
Bottles	. .	s. 10·16	10·18	9·55	100	100	94
Butter	. .	s. 96·25	113·14	138·88	100	117	144
Candles	. .	s. 11·87	8·04	6·49	100	67	55
Carpets	. .	d. 30·01	38·64	28·14	100	129	94
Cheese	. .	s. 82·32	86·30	81·06	100	105	99
Cloth	. .	d. 29·53	41·00	34·19	100	137	114
Coals	. .	s. 9·19	20·90	9·14	100	227	99
Copper	. .	£ 4·96	4·88	3·57	100	98	72
Cordage	. .	s. 48·39	59·70	52·26	100	124	108
Cottons,	. .	d. 3·02	3·45	2·71	100	115	90
„	printed .	d. 4·11	4·78	3·74	100	117	91
„	mixed .	d. 7·10	9·29	5·84	100	131	82
Fish	. .	s. 28·20	28·38	29·90	100	101	106
Flannel	. .	d. 18·47	18·10	15·14	100	98	82
Firearms	. .	s. 32·67	29·13	28·20	100	90	87
Glass, flint	. .	s. 55·18	57·88	47·50	100	105	86
„	plate .	s. 2·67	3·01	1·53	100	112	58
Gunpowder	.	d. 7·40	6·38	6·03	100	86	81
Hats	. .	s. 36·35	29·46	21·86	100	82	60
Horses	. .	£ 80·51	62·95	63·24	100	78	79
Iron rails	. .	£ 7·70	13·27	6·83	100	172	89
„	pig . .	s. 51·77	124·65	56·44	100	240	109
Jute	. .	d. 4·68	3·98	2·70	100	85	57
Lead	. .	£ 21·65	23·75	15·45	100	110	72
Leather	. .	s. 8·99	9·00	8·74	100	100	97
Linen	. .	d. 7·16	7·62	6·90	100	107	97
„	printed .	d. 9·87	7·63	8·11	100	77	82
Paper	. .	£ 3·96	3·04	2·23	100	75	56
Salt	. . .	s. 10·53	18·77	11·90	100	179	113
Silk	. . .	s. 3·14	3·54	3·37	100	112	107
Soap	. . .	s. 24·71	26·45	22·40	100	106	90
Spirits	. .	s. 2·37	2·50	5·87	100	106	244
Steel	. . .	£ 33·33	37·11	11·80	100	111	35
Sugar	. .	s. 49·24	30·02	23·30	100	61	48
Tin	. . .	£ 6·07	6·83	5·24	100	113	86
Wool	. . .	d. 17·46	21·18	15·20	100	121	87
Yarn, cotton	.	d. 12·54	17·76	12·96	100	142	104
„	linen .	d. 13·91	16·51	13·71	100	117	98
„	woollen .	d. 30·13	37·26	25·62	100	124	85
Zinc	. . .	£ 21·83	24·92	14·67	100	114	67
Total	. .	...	...	...	4,400	5,001	3,937

Digitized by Google

I.—Prices in United States (in English Gold).

	1825–30.	1831–40.	1841–50.	1851–60.	1861–70.	1871–80.
Coal, ton . .	s. 33	34	25	25	26	19
Iron „ . .	s. 218	187	133	121	122	131
Wheat, bushel . .	d. 55	68	58	79	75	65
Maize „ . .	d. 30	40	32	40	38	28
Pork lb. . .	d. 3·18	4·26	2·70	4·25	4·32	3·68
Sugar „ . .	d. 3·75	3·40	3·10	3·11	4·20	3·52
Flour „ . .	d. 1·38	1·74	1·39	1·50	1·31	1·27
Rice „ . .	d. 1·56	1·80	2·28	2·04	3·51	3·42
Fish „ . .	d. 1·38	2·16	2·76	3·96	3·65	3·17
Tobacco „ . .	d. 2·01	3·62	2·89	4·60	6·15	4·32
Wool „ . .	d. 13·51	16·48	13·50	17·52	18·84	19·38
Coffee „ . .	d. 7·0	5·8	3·9	5·2	7·7	8·3
Cotton „ . .	d. 6·0	6·2	4·2	5·3	18·2	7·0
Beef „ . .	d. 2·3	2·7	2·3	2·5	2·3	2·3
Hams „ . .	d. 5·0	5·2	3·7	4·9	4·8	4·5
Butter „ . .	d. 7·5	8·6	6·6	9·6	11·4	11·2
Cheese „ . .	d. 3·6	4·0	3·1	4·1	4·9	5·5
Leather „ . .	d. 10·5	9·6	7·9	10·9	11·2	12·5

K.—Prices in France (English Money).

	1400–99.	1500–99.	1600–99.	1701–90.	1820–30.	1850–60.	1870–80.
Wheat, qr. .	s. 5	7	18	26	44	52	53
Wine, gallon .	d. 4	8	12	15	18	25	22
Eggs, dozen .	d. 2	2	3	3	4	6	9
Meat lb. .	d. ...	2	3	3	4	6	8
Butter „ . .	d. ...	3	4	6	7	10	14
Sugar „ . .	d. ...	...	6	8	11	8	5
Potatoes, cwt.	d. ...	...	...	...	24	46	70

L.—Prices of Food in 1878.

	England.	France.	Germany.	Italy.	N. York.	Chicago.
Beef, lb. . .	d. 10	9·5	9·0	8·0	6·0	4·0
Bread „ . .	d. 2	1·6	2·0	3·0	2·0	2·0
Butter „ . .	d. 17	13	11	14	14	12
Eggs, dozen .	d. 11	9	10	9	14	9
Milk, quart .	d. 4	...	2	4	5	3
Sugar, lb. . .	d. 4	5	5	4	5	5
Coffee „ . .	d. 15	15	17	16	13	14
Rice „ . .	d. 3	...	4	3	5	5
Pork „ . .	d. 7	7	8	7	5	3
Potatoes, cwt.	s. 6	4	4	8	11	6

Digitized by Google

PRISONS.

A.—Prison Population of Great Britain (1880).

	England.	Scotland.	Great Britain.
Males	23,791	2,063	25,854
Females	4,533	1,008	5,541
Total	28,324	3,071	31,395
Per 100,000 *Inhabitants.*			
Males	189	114	179
Females	34	52	36
General	109	83	105

In England there are 84 male to 16 female offenders, in Scotland 67 of the former to 33 of the latter.

B.—Persons Committed to Prison.

Annual Average per 100,000 *Inhabitants.*

Period.	England.	Scotland.	Ireland.	United Kingdom.
1840–49	164	149	302	204
1850–59	126	130	227	151
1860–69	91	104	91	92
1870–79	64	89	84	69

For other countries, see *Crime*.

PROSTITUTION.

	Prostitutes.	Per 10,000 Inhab.		Prostitutes.	Per 10,000 Inhab.
London	31,800	83	Lyons	5,520	145
Paris	26,990	122	Marseilles	4,080	112
Berlin	27,300	248	Bordeaux	2,610	125

PROTECTION.—The absurdity of protection is manifested in the United States: inferior native ironstone costs (1882) 42 shillings per ton at Pittsburg, while the best Bilbao ores can be delivered in New York harbour at 12 shillings per ton. See *Bounties*.

PRUDHOMMES.—A kind of arbitration-tribunal for disputes between employers and workmen: cases heard annually average 42,600 in France, and 4,100 in Belgium.

PUBLIC PROPERTIES IN FRANCE (1882).

Summary.	Millions £.
State forests	50
Royal palaces	12
Fortifications	29
Buildings, &c.	42
Total	133

Palaces, &c.	Value, Thousands.
Versailles	£4,444
Fontainebleau	2,202
Louvre, &c.	5,150
Total	£11,796

Paris.	Value, Thousands.
Churches	£7,188
Schools.	4,280
Parks	10,890
Various	20,027
Total	£42,385

The Church of St. Roch, Paris, is valued at £660,000; the Madeleine at £460,000.

Digitized by Google

PUBLIC WORKS.

	Value in Millions £.					Ratio per Inhab.
	Roads and Canals.	Streets, Drains, &c.	Public Buildings.	Fortif. Arsenals, &c.	Total.	
U. Kingdom .	162	68	114	203	547	£15
France . .	297	34	95	164	590	16
Germany . .	210	37	73	122	442	10
Russia . .	76	26	44	78	224	3
Austria . .	80	13	39	56	188	5
Italy . . .	22	23	33	53	131	4½
Spain. . .	10	10	17	23	60	4
Portugal . .	2	2	4	7	15	4
Belgium . .	10	8	7	16	41	8
Holland . .	23	6	6	90	125	31
Denmark . .	3	2	2	4	11	6
Sweden . .	18	2	3	9	32	7
Norway . .	7	1	1	4	13	7
Switzerland .	14	3	4	9	30	11
Greece . .	2	1	2	2	7	4
Europe . .	936	236	444	840	2,456	£8
United States .	174	46	139	168	527	10
Canada . .	11	3	6	10	30	7
Mexico . .	3	2	5	2	12	1
Argent. Repub. .	1	1	2	2	6	3
Australia . .	8	4	6	10	28	10
Total . .	1,133	292	602	1,032	3,059	£8

PUBLIC WORKS LOANS.

From 1817 *to* 1881.

	Great Britain.	Ireland.	Total.
Advances . .	£44,743,000	£31,800,000	£76,543,000
Repaid . .	16,768,520	18,000,000	34,768,520
Bad debts . .	1,948,000	7,714,000	9,662,000
Balance due .	£26,026,480	£6,086,000	£32,112,480

PUBLIC WORKS (UNITED STATES).

A.—Expenditure from 1789 to 1879.

Millions £.

Buildings . . .	24	Harbours and canals .	16
Lighthouses . . .	5	Roads, &c. . . .	22
Arsenals . . .	15	Fortifications . .	11
Total . .	£93,000,000.		

The above represents only the subsidies granted by Congress, a small part of the total outlay.

Digitized by Google

B.—Distribution of Expenditure.

States.	Millions £.	States.	Millions £.
New England . .	9	Southern . . .	16
Middle . . .	28	Western . . .	40

Total . . £93,000,000.

PULSE.—The number of pulsations per minute is 120 in infancy, 80 in manhood, 60 in old age, and rather more in women than in men.

PUMPS.

Work.	Million Tons Water.	No. of Days.	Gallons per Pump per Hour.
Zegedin . .	36	70	90,000
Severn tunnel .	...	...	125,000

The draining of Haarlem lake, which took 13 years, could now be done in 22 months by means of 100 of the new pumps patented in England in March 1882. The proposal to pump out the Zuyder Zee, with 500 pumps, at a cost of £10,500,000, in a period of 2 years, is based on this table:—

	Square Miles.	Depth, Feet.	Million Tons Water.
Haarlem . .	90	15	990
Zuyder Zee . .	600	12	5,400

The site of Haarlem lake sold for £16 an acre, but the Zuyder Zee must realise £26 per acre to cover expenses.

To pump out Lough Neagh, in Ireland, which contains 4800 million tons of water, would cost fully as much as the Zuyder Zee, and the land reclaimed should sell for £100 an acre to pay expenses. See *Windmills*.

PYRAMIDS.—The largest, that of Cheops, has a base equal to the area of Leicester Square, London, and a height of 452 feet. It is composed of 4 million tons of stone, and occupied 100,000 men during 20 years, equal to an outlay of 40 millions sterling. It would now cost 4 millions sterling, at the contract price of 18 pence per cubic foot.

Digitized by Google

Q

QUAKERS.

A.—Average Duration of Life.

	Years.		Years.
1847–50 . .	52	1867–70 . .	52
1857–60 . .	53	1879–82 . .	58

B.—Quakers and General Population.

	Quakers.	General Population.
Deaths, per 1000 . . .	18	22
Insane, per 10,000 . . .	33	28
Charities per inhabitant . .	32s.	6s.

The total number in the United Kingdom is 17,960, who have 10 representatives in the House of Commons, whereas 1½ million Roman Catholics in Great Britain have but one co-religionist in that house.

QUININE. See *Chinchona.*

R

RABBITS.

	Consumption, Millions per An.	Rabbits, per 100 Inhab.
England . . .	20	77
France	70	186

One pair of rabbits can become multiplied in 4 years into 1,250,000. They were introduced into Australia a few years ago, and now that colony ships 6 million rabbit skins yearly to England.

RAILWAYS.

A.—Summary.

Period.	Construction, Miles.	Cost, Millions £.	Cost per Mile, £.	Annual Average.	
				Miles Opened.	Cost, Millions £.
1825–40 . .	5,231	114	21,800	360	8
1840–50 . .	19,259	327	17,100	1,930	33
1850–60 . .	42,580	538	12,700	4,260	54
1860–70 . .	63,100	1,098	17,400	6,310	110
1870–82 . .	120,022	2,263	18,900	10,000	190
Total . .	250,192	4,340	17,300	5,320	93

Digitized by Google

B.—Four Decades of Railways.

	Miles Open.				Cost, Millions £.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
U. Kingdom	6,621	10,433	15,537	17,945	240	348	530	729
Continent .	8,311	21,815	49,320	86,818	134	356	890	1,788
U. States . .	9,020	30,593	52,974	93,671	60	225	480	1,041
Canada, &c. .	538	4,228	12,339	31,804	7	50	177	413
Total .	24,490	67,069	130,170	230,238	435	979	2,077	3,971

C.—Traffic in 1882.

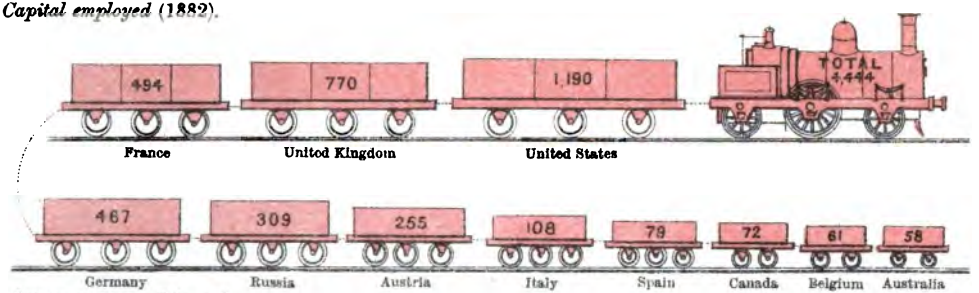
	Millions.		Receipts, Thousands Omitted.	Working Expenses, per Cent.	Earnings per Mile.	Divid. on Capital.
	Passengers.	Goods, Tons.				
United Kingdom	752	256	£69,400	52·0	£3,772	4·20
France	180	90	42,800	52·2	2,520	4·12
Germany . . .	210	157	47,300	54·0	2,062	4·21
Russia	38	35	22,200	70·0	1,547	2·20
Austria . . .	44	57	23,200	56·8	1,860	3·76
Italy	34	10	6,600	61·5	1,270	2·48
Spain	24	6	5,300	47·2	1,178	3·78
Portugal . . .	4	1	700	57·1	902	2·55
Belgium . . .	56	36	5,400	59·2	2,020	3·66
Holland . . .	17	6	1,800	50·0	1,283	3·46
Denmark . . .	6	1	700	71·4	740	2·10
Swed. and Nor. .	9	7	2,200	68·2	505	2·42
Switzerland . .	22	6	2,300	56·5	1,402	3·03
Turkey, &c. . .	1	...	500	66·5	900	2·17
Europe . . .	1,397	668	£230,400	55·4	£2,070	3·80
United States .	270	290	136,300	62·2	1,444	4·80
Canada. . . .	11	10	5,600	77·6	790	1·86
Spanish America	8	3	6,700	66·0	880	2·05
Australia . . .	4	4	4,400	61·5	1,010	3·60
India	48	9	12,100	51·2	1,330	4·55
Egypt, &c. . .	4	1	3,300	68·0	960	2·80
The World .	1,742	985	£398,800	57·3	£1,610	4·10

The above includes 15 per cent. extra in United Kingdom for season-tickets.

Digitized by Google

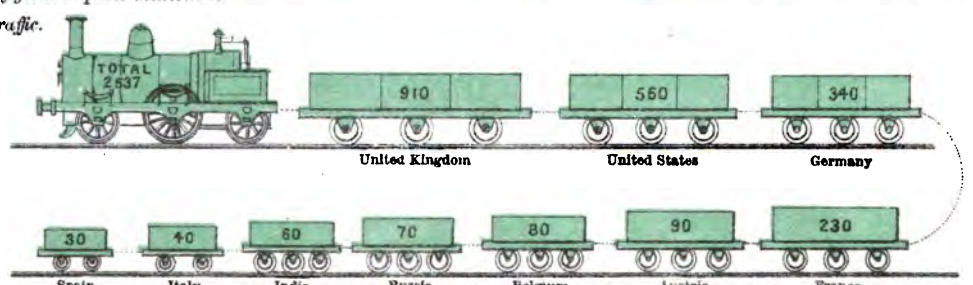
RAILWAYS.

Capital employed (1882).



The figures express millions £.

Traffic.



The numbers express millions of passengers and tons of cargo added together.

Digitized by Google

Digitized by Google

D.—Railways in Countries.

	Miles Open.			Miles per 100,000 Inhab.		
	1840.	1860.	1882.	1840.	1860.	1882.
United Kingdom	838	10,433	18,405	3	36	52
France	265	5,863	17,006	1	15	46
Germany	291	6,887	22,160	1	19	49
Russia	16	937	15,070	...	1	16
Austria	295	3,205	12,330	1	10	33
Italy	...	1,118	5,550	...	5	20
Spain and Portugal	...	1,066	5,610	...	5	27
Belgium and Holl.	207	1,294	4,110	3	15	40
Scandinavia	...	731	5,652	...	10	63
Switzerland	...	681	1,640	...	27	60
Turkey, &c.	...	41	1,860	...	...	...
Europe	1,912	32,256	109,393	1	12	34
United States	3,319	30,593	104,810	20	100	210
Canada	...	2,173	7,450	...	63	178
Spanish America	...	365	8,540	...	1	28
Australia	...	165	5,390	...	13	190
India	...	841	10,790	...	...	6
Egypt	...	275	1,215	...	10	24
Other countries	...	401	2,784	...	...	...
Total	5,231	67,069	250,372	...	...	...

E.—Accidents on Railways.

	Killed.		Wounded.		Total.	Per Million Passengers.
	Passengers.	Others.	Passengers.	Others.		
U. Kingdom	29	1,106	904	3,055	5,094	8·1
France	34	327	410	1,813	2,584	15·8
Germany	26	494	81	1,950	2,551	12·2
Russia	20	395	62	668	1,145	29·2
Austria	3	218	22	343	586	13·5
Italy	9	170	52	636	867	28·4
Spain	22	80	130	124	356	14·8
Holland	4	25	9	29	67	4·4
Belgium	6	169	74	380	629	11·7
Scandinavia	2	31	4	37	74	5·0
Switzerland	7	34	16	62	119	5·4
Europe	162	3,049	1,764	9,097	14,072	10·8
United States	2,849		5,866		8,215	41·1
Total	5,560		16,727		22,287	14·8

Digitized by Google

F.—RAILS, EMPLOYÉS AND LOCOMOTIVES.

	Rails, Tons, Thousands Omitted.		Employés.		Max. Speed, Miles per Hour.	Locomotives, No.	Tons Rail per Mile.
	Iron.	Steel.	No.	Per Mile.			
U. Kingdom	1,980	2,410	262,000	15	50	13,480	240
France . .	1,570	1,715	234,000	14	39	6,220	202
Germany. .	2,550	1,570	301,000	14	31	10,900	195
Russia . .	820	920	...	...	25	3,560	126
Austria . .	930	700	...	...	24	3,600	128
Italy . . .	...	...	...	...	29	1,560	...
Belgium . .	265	255	...	...	24	...	210
Various . .	2,215	1,620	...	...	...	1,540	150
Europe .	10,330	9,190	...	...	50	40,860	182
U. States .	7,200	5,200	463,000	5	40	17,800	118
Various .	3,200	3,100	...	...	...	5,900	110
Total .	20,730	17,490	...	...	50	64,560	152

The weight of rail varies in England from 28 to 76 lbs. per yard, the tons of rail per mile above stated including double lines. Locomotives cost about £2000, passenger carriages from £200 to £400. The rolling-stock of the world sums up a total of 360 millions sterling.

G.—BRITISH RAILWAYS.

	England.			Scotland.		
	1860.	1870.	1882.	1860.	1870.	1882.
Miles	7,583	11,043	13,000	1,486	2,519	2,940
Capital, mill. £	289	440	635	39	63	98
Mile, earnings .	£3,090	£3,330	£4,546	£1,990	£1,890	£2,542
Expenses. . .	1,490	1,650	2,379	905	950	1,270
Profit per mile .	1,600	1,680	2,167	1,085	940	1,272

	Ireland.			United Kingdom.		
	1860.	1870.	1882.	1860.	1870.	1882.
Miles	1,364	1,975	2,465	10,433	15,537	18,405
Capital, mill. £	20	27	35	348	530	768
Mile, earnings .	£1,030	£1,060	£1,147	£2,670	2,810	£3,772
Expenses. . . .	440	550	630	1,270	£1,402	1,966
Profit per mile .	590	510	517	1,400	1,408	1,806

Digitized by Google

H.—Railway Capital and Public Wealth.

	Amount, Millions £.	Per Mile of Railway.	Per Inhab.	National Wealth, Millions £.	Ratio of Railway Capital, per Cent.
United Kingdom .	770	£41,800	£22	8,720	8·8
France . . .	494	27,400	13	8,060	6·1
Germany . . .	467	21,100	10	6,320	7·1
Russia . . .	309	20,500	4	4,050	7·7
Austria . . .	265	20,700	7	3,920	6·5
Italy . . .	108	19,400	4	2,230	4·8
Spain . . .	79	16,400	5	1,570	5·1
Portugal . . .	12	15,400	3	360	3·3
Belgium . . .	61	22,500	11	1,180	5·3
Holland . . .	27	18,600	7	1,120	2·4
Denmark . . .	10	10,300	5	354	2·8
Sweden and Norway	32	6,800	5	738	4·3
Switzerland . .	33	20,000	12	310	10·7
Turkey, &c. . .	24	13,300	2	720	3·3
Europe . . .	2,691	£24,100	£8	39,652	6·7
United States . .	1,190	11,400	23	10,370	11·4
Canada . . .	72	9,600	17	650	11·1
Australia . . .	56	10,400	20	598	9·3
Total . .	4,009	£17,400	£10	51,270	7·8

I.—Traffic and Population Compared.

Per Inhabitant.

	Passengers.	Tons Goods.		Passengers.	Tons Goods.
United Kingdom	22	7	Spain . .	1½	⅓
France . .	5	2½	Belgium . .	10	7
Germany . .	5	3	Switzerland .	8	2
Russia . .	½	½	United States .	5	6
Austria . .	1½	1½	Canada . .	3	2½
Italy . . .	1¼	⅓	Australia. .	1½	1½

K.—United States Railways.

States.	Miles Open.			Cost, Millions £.		
	1860.	1870.	1882.	1860.	1870.	1882.
New England .	3,669	4,494	6,150	31	43	64
Middle . . .	6,321	10,964	16,440	68	163	306
Southern . . .	9,516	11,163	15,800	53	64	112
West. and Pacif.	11,286	26,264	66,420	87	290	708
The Union .	30,792	52,885	104,810	239	560	1,190

Digitized by Google

United States Railways—*continued.*

Capital Employed.

States.	Per Mile.			Per Inhabitant.		
	1860.	1870.	1882.	1860.	1870.	1882.
New England .	£8,450	£9,500	£10,400	£10	£12	£16
Middle . . .	10,800	14,800	18,300	8	16	23
Southern . . .	5,600	5,700	7,100	5	6	7
Western . . .	7,700	11,060	10,700	9	21	35
Total	8,100	10,600	11,330	8	14	23

The increase of railways and farms in some of the Western and other States from 1871 to 1880 is shown as follows:—

	Railways, Miles.		Increase per Cent.	Farms, Thousands of Acres.		Increase per Cent.
	1871.	1880.		1871.	1880.	
Illinois. . .	5,904	8,326	41	25,883	31,674	21
Ohio . . .	3,740	6,664	78	21,713	24,529	13
Iowa . . .	3,160	6,113	93	15,542	24,753	61
Texas . . .	865	5,344	520	18,397	36,292	98
Indiana . .	3,529	4,765	36	18,120	31,674	74
Michigan . .	2,116	4,284	102	10,019	13,807	38
Missouri . .	2,580	4,211	62	21,707	27,879	27
Kansas . .	1,760	3,718	111	5,657	21,417	282
Wisconsin .	1,725	3,442	99	11,715	15,353	31
Minnesota .	1,612	3,391	110	6,484	13,403	106
Nebraska . .	943	2,310	146	2,074	9,945	380
11 States .	27,934	52,568	88	157,311	250,726	60

L.—Construction of Union Pacific.

	Mountains.	Plains.	Diversified.	Total.
Miles . .	300	533	944	1,777
Subsidy . .	£2,970,000	£1,760,000	£6,240,000	£10,970,000
Company stock	7,800,000	4,000,000	16,030,000	27,830,000
Total cost .	10,770,000	5,760,000	22,270,000	38,800,000
Cost per mile .	35,900	10,800	23,400	21,960

The charter was signed by President Lincoln in July 1862, and the first train left Chicago for San Francisco on May 1, 1869. Besides a subsidy of £10,970,000, the Company received a land-grant of 23 million acres in alternate lots, 20 miles deep on either side of the line, say 34,000 square miles.

Digitized by Google

M.—France, Traffic of 40 Years.

Years.	Annual Average.					
	Millions.		Receipts, per Mile.	Working Expenses, per Cent.	Pence per Mile.	
	Passengers.	Tons Goods.			Passengers.	Tons Goods.
1841–49 . . .	10	2	£2,080	54	1·08	1·76
1850–59 . . .	32	11	3,110	44	0·96	1·28
1860–69 . . .	81	33	2,880	46	0·88	1·04
1870–79 . . .	132	56	2,820	50	0·83	0·96

N.—Passenger Tariff per 100 Miles (in Pence).

	Class.				Class.		
	1st.	2nd.	3rd.		1st.	2nd.	3rd.
Great Britain .	230	160	95	Switzerland .	160	115	81
France . . .	192	144	105	Belgium . .	115	85	56
Germany . .	154	115	77	Holland . .	160	135	77
Russia . . .	182	136	77	Denmark . .	155	105	68
Austria . . .	180	135	90	Sweden . .	155	105	68
Italy	173	125	85	Norway . .	105	68	48
Spain	200	154	95	Turkey . . .	290	230	145
Portugal . .	162	125	85				

O.—Passenger Traffic according to Class.

	Percentage of Passengers.			
	First.	Second.	Third.	Total.
England . . .	6	10	84	100
Scotland . . .	7	6	87	100
Ireland . . .	7	16	77	100
United Kingdom .	6	10	84	100
France . . .	8	32	60	100
Germany . . .	1	13	86	100
India	1	2	97	100

P.—Highest Railways in the World.

Line.	Situate.	Feet.
Lima-Oroya .	Andes . . .	15,840
Mollendo-Titicaca .	,, . . .	14,610
Union Pacific .	Rocky Mountains .	8,573
Brenner . . .	Alps . . .	4,450
Mont Cenis . .	,, . . .	4,290
St. Gothard . .	,, . . .	3,780
Zurich-Ensiedeln .	,, . . .	2,910

Digitized by Google

Q.—Railway Tax.

	Amount.	Ratio to Earnings, per Cent.	Pence per Passenger.
England . . .	£670,000	1·1	0·25
Scotland . . .	60,000	0·9	0·23
France . . .	3,400,000	8·0	5·02
Spain . . .	330,000	6·2	3·40

R.—Growth of Railway Traffic.

	Millions.					
	Passengers.			Goods, Tons.		
	1860.	1870.	1882.	1860.	1870.	1882.
United Kingdom . .	187	348	752	82	170	256
France	54	110	180	22	52	90
Germany . . .	48	136	210	24	98	157
Russia	5	14	38	3	8	35
Austria . . .	12	21	44	7	25	57
Italy	6	24	34	1	6	10
Spain and Portugal .	5	10	28	2	4	7
Belgium and Holland .	19	47	73	8	29	42
Switzerland . . .	6	15	22	1	4	6
Scandinavia . . .	1	8	15	...	5	8
Europe . . .	343	733	1,396	150	401	668
United States . .	...	110	270	...	150	290
Total . .	...	843	1,666	...	551	958

Including 15 per cent. for season-ticket journeys in the United Kingdom.

The preceding table compared with mileage gives the following results :—

	Passengers per Mile.			Goods, Tons, per Mile.		
	1860.	1870.	1882.	1860.	1870.	1882.
U. Kingdom .	17,950	22,400	41,100	7,900	10,800	14,200
France . . .	9,300	10,200	10,600	3,700	4,800	5,500
Germany . .	7,020	11,400	9,900	3,500	8,300	7,100
Russia . . .	4,700	2,100	2,550	2,800	1,200	2,400
Austria . . .	4,040	3,550	3,670	2,400	4,200	4,800
Italy	5,800	6,160	6,110	900	1,500	1,900
Spain and Port.	5,100	2,640	5,320	1,700	1,050	1,400
Belg. and Holl.	14,900	18,020	17,900	6,600	11,200	10,200
Switzerland . .	8,800	16,400	13,750	1,500	4,400	3,900
Scandinavia . .	1,340	4,400	3,020	100	2,800	1,640
Europe . . .	10,600	11,500	12,700	4,820	6,240	5,570
United States .	...	2,080	2,860	...	2,950	3,280

Digitized by Google

RAINFALL.

A.—Annual Average (Inches).

Aberdeen	29	Glasgow	21	Philadelphia	41
Adelaide	20	Havana	91	Pittsburg	37
Armagh	36	Hobart	21	Prague	14
Baltimore	41	Isle of Man	37	Rio Janeiro	59
Bath	30	Key West	36	Rome	31
Bergen	89	Limerick	35	Rotterdam	23
Berlin	24	Lisbon	27	St. Bernard	59
Bermuda	55	Liverpool	35	San Francisco	22
Bombay	75	London	25	St. Helena	45
Bordeaux	30	Madeira	28	St. Domingo	108
Boston	45	Madras	44	St. John's, N.B.	51
Brisbane	36	Manchester	36	St. John's, N.F.	58
Bristol	23	Mannheim	22	St. Louis	42
Brussels	29	Maranham	277	St. Petersburg	17
Calcutta	76	Marseilles	23	Sierra Leone	86
Cambridge	24	Melbourne	29	Singapore	97
Cayenne	116	Metz	29	Stockholm	20
Charleston	44	Milan	38	Strasburg	27
Cincinnati	45	Milwaukee	30	Stuttgart	25
Coimbra	118	Montpelier	32	Sydney	49
Copenhagen	19	Naples	30	Toronto	38
Cork	40	New Orleans	51	Toulouse	25
Cracow	13	New York	43	Turin	27
Detroit	30	Nottingham	26	Truro	44
Dublin	29	Oxford	27	Utah	24
Dumfries	37	Palermo	22	Vera Cruz	183
Edinburgh	25	Paris	22	Washington	41
Florence	41	Pekin	27	Windermere	140
Geneva	32	Penzance	37	York	23
Genoa	47	Perth, W.A.	25	Zurich	34

B.—Rainfall and Horse-power.

	Inches.	Million Horse-power.	Horse-power per 1000 Inhab.		Inches.	Million Horse-power.	Horse-power per 1000 Inhab.
U. Kingdom	31	9	256	Italy	34	8	283
France	27	12	315	Spain and P.	13	6	305
Germany	25	12	268	Belg. & Hol.	26	2	181
Russia	15	72	890	Scandinavia	22	15	1,660
Austria	16	11	292	Europe	16	152	450

C.—Rainfall of Great Britain.

Years.	Inches.	Years.	Inches.
1815–24	29·0	1845–54	28·6
1825–34	28·5	1855–64	26·6
1835–44	28·3	1865–82	29·3

The average rainfall is equal to 630,000 gallons (almost 3000 tons) per acre per annum, of which 2000 tons are required to feed the rivers and crops, and 1000 tons per

Digitized by Google

acre are lost, being allowed to run off. The above does not include Ireland, where the rainfall averages 35 inches.

D.—Rainfall of London.

The average for 70 years has been :—

Summer half-year	12·87
Winter „	12·03
Annual rainfall	24·90

Taking the above figures as par, the variations of 70 years have been as follows :—

	Summer.	Winter.	Year.		Summer.	Winter.	Year.
1813–22	97	110	103	1853–62	105	85	95
1823–32	108	93	101	1863–72	93	107	100
1833–42	92	99	95	1873–82	110	106	108
1843–52	95	101	98				

E.—Ammonia in Rain.

Valentia, Kerry	1·00	Germany	10·61
Scotland, west coast	2·69	London	19·17
„ mountains	2·96	Scotland	21·22
„ east coast	5·51	Liverpool	29·89
England, east coast	5·94	Manchester	36·54
„ west coast	10·55	Glasgow	50·58

F.—Rainfall of England, in Months (1815–48).

	Inches.		Inches.		Inches.
January	1·68	May	1·96	September	2·40
February	1·58	June	1·83	October	2·67
March	1·61	July	2·37	November	2·53
April	1·73	August	2·40	December	2·02
4 months	6·60	4 months	8·56	4 months	9·62

G.—Rainfall of France.

	Million Tons per Annum.	Tons per Second.
Rainfall	375,000	11,901
Outflow by Rhone	54,000	1,718
„ „ Gironde	37,000	1,178
„ „ Loire	31,000	985
„ „ Seine	22,000	694
Other rivers	36,000	1,146
Absorbed for crops, &c.	195,000	6,180
Total	375,000	11,901

France loses nearly half her rainfall, England more than one-third.

RATES. See *Taxes.*

Digitized by Google

REFORMATORIES.

	Great Britain.		Ireland.		U. Kingdom.		Total.
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	
Reformatories .	4,857	1,070	973	235	5,830	1,305	7,135
Industrial schools	18,387	4,518	2,185	3,348	20,572	7,866	28,438
Total . .	23,244	5,588	3,158	3,583	26,402	9,171	35,573

These institutions in 1880 cost for maintenance £596,000, being an average of £16 per child in Great Britain, and £21 in Ireland. The Treasury subvention was 6 pence a day on each child, that is £323,000, the rest being defrayed by donations.

The good effect of Reformatories, since their introduction in 1869, is shown thus:—

	1869.	1881.
Juvenile offenders . .	10,314	5,579
Per million inhabitants .	458	215

This gives a decline of 53 per cent. in juvenile crime.

The summary of reformatories for 11 years was:—

Admitted . .	36,232	Died, removed, &c. .	5,547
Put to trades . .	23,550	On hand . . .	7,135

Put to trade includes those put to sea.

REGISTRY.—Tax on transfer of property in France:—

Year.	Amount, Thousands Omitted.	Pence per Inhab.	Year.	Amount, Thousands Omitted.	Pence per Inhab.
1830 . .	£6,100	46	1860 . .	£11,010	70
1840 . .	7,600	53	1871 . .	15,020	98
1850 . .	8,140	57	1881 . .	22,080	140

If these figures be compared with the value of property in France (see *Legacy Returns*, E.), it will appear that the tax has only kept pace with the increase of wealth. Property almost doubled from 1830 to 1860, and again from 1860 to 1880.

REINDEER.

	Herds.	Head of Deer.	Average.
Finland . . .	2,822	44,400	15
Norway . . .	2,400	101,800	43
Sweden . . .	3,200	220,800	65
Total . .	8,422	367,000	44

They can travel with a sleigh 130 miles a day, and are worth usually 30 shillings a head.

Digitized by Google

RELIGION.

A.—All Nations.

Thousands Omitted.

	Roman Catholic.	Protestant.	Greek.	Jews.	Mahometans.
U. Kingdom .	5,336	29,390	...	51	...
France . .	35,387	581	...	49	...
Germany . .	14,867	25,580	28	512	...
Russia . .	6,780	4,132	57,161	2,298	5,662
Austria . .	29,430	3,570	1,520	1,370	449
Italy . . .	26,663	59	...	35	...
Spain . . .	16,410	11	...	3	...
Portugal . .	4,260	1	...	...	...
Belgium . .	5,410	12	...	3	...
Holland . .	1,313	2,193	...	68	...
Denmark . .	2	1,930	...	4	...
Sweden and Nor.	1	6,115	...	2	...
Switzerland .	1,161	1,667	...	7	...
Greece . .	12	1	1,442	3	1
Servia . .	4	1	1,853	2	6
Roumania . .	114	14	4,810	400	2
Turkey . .	280	45	3,220	75	3,532
Europe . .	147,430	75,302	70,034	4,882	9,652
United States .	6,143	42,800	...	110	...
Canada . .	2,150	2,100	...	...	...
Spanish America	33,340	115	...	47	...
West Indies .	2,480	1,030	...	...	...
Australia . .	604	2,220	...	1	...
Total . .	192,147	123,567	70,034	5,040	9,652

For expenditure, clergy, &c., see *Church*.

B.—United Kingdom.

	Thousands Omitted.			Percentage.			
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.	U. Kingdom.
Ch. of England	18,798	99	636	72·3	2·7	12·3	55·8
Rom. Catholic	1,066	318	3,952	4·1	8·6	77·4	15·2
Presbyterian .	114	2,997	486	0·4	81·0	9·4	10·3
Methodist, &c.	5,990	281	48	23·2	7·7	0·9	18·7
Total . .	25,968	3,695	5,122	100·0	100·0	100·0	100·0

C.—England, Church Attendance.

Ratio to Population.

	Per Cent.		Per Cent.		Per Cent.
Sheffield . . .	23	Bradford . .	27	Northampton	40
Bolton	24	Bristol . . .	31	Hull . . .	41
Nottingham . .	24	Southampton .	38	Portsmouth .	41
Liverpool . . .	26	Derby . . .	39	Bath . . .	52

Digitized by Google

The total showed 37 per cent. Church of England, 8 per cent. Roman Catholics, and 55 per cent. made up of various sects.

D.—United States.

	Thousands Omitted.		Percentage.		Church Property, Millions £. 1870.
	1835.	1880.	1835.	1880.	
Methodists . .	1,240	14,667	8·6	29·4	9
Baptists . .	2,929	10,464	20·5	20·9	11
Presbyterians .	2,102	6,478	14·6	12·9	15
Roman Catholics	555	6,143	3·9	12·3	13
Various . .	7,532	12,407	52·4	24·5	27
Total . .	14,358	50,159	100·0	100·0	75

E.—Roman Catholics, British and American.

	Clergymen.	Churches.	Laity.
Great Britain . .	2,305	1,461	1,384,000
Ireland	2,977	2,620	3,952,000
Canada	1,230	1,060	2,150,000
Australia . . .	402	787	604,000
India	1,134	400	1,318,000
Other Colonies . .	322	344	465,000
British Empire . .	8,370	6,672	9,873,000
United States . .	6,119	5,606	6,143,000
Total . . .	14,489	12,278	16,016,000

RENTES.—Holders of French national stock.

Year.	Holders, Thousands Omitted.	Average Sum.	Year.	Holders, Thousands Omitted.	Average Sum.
1810 . .	146	£480	1860 . .	1,074	£395
1830 . .	195	1,230	1870 . .	1,254	360
1850 . .	846	350	1880 . .	4,630	170

RESISTANCE.—On a railway it increases with the speed of the train per hour (on level way) as follows:—

Miles.	Lbs. per Ton.	Miles.	Lbs. per Ton.	Miles.	Lbs. per Ton.
10	8·4	31	18·2	50	32·9
14	12·6	35	22·5	53	41·7
29	16·5	41	26·8	61	52·6

See *Gradients.*

Digitized by Google

REVENUE.

A.—British Revenue.

Date.	Reign.	Amount, Thousands Omitted.			Shillings per Inhabitant.	
		Nominal.	In Silver.	Present Value.	In Silver.	Present Value.
1080	William I. .	£400	£1,320	£4,010	12	36
1090	Rufus . . .	350	1,150	3,520	10	30
1120	Henry I. . .	300	990	3,005	9	27
1150	Stephen . .	250	830	2,510	8	24
1180	Henry II. . .	200	660	2,005	6	18
1210	John. . . .	100	330	1,000	3	9
1250	Henry III. .	80	264	800	2½	7
1300	Edward I. . .	150	495	1,502	4½	13
1350	Edward III. .	154	460	1,360	4	12
1400	Henry IV. . .	100	264	800	2	6
1480	Edward IV. .	100	162	500	1	3
1500	Henry VII. .	400	650	2,000	3	9
1540	Henry VIII. .	800	1,300	3,600	6	16
1600	Elizabeth . .	500	550	1,500	2	7
1620	James I. . .	600	640	1,500	2½	6
1640	Charles I. . .	896	950	1,800	4½	8
1662	Charles II. .	1,800	1,910	3,600	7	14
1686	James II . .	2,002	2,120	4,010	8	15
1700	William III. .	3,895	4,135	8,030	15	29
1713	Anne . . .	5,692	6,030	11,080	18	33
1716	George I. . .	6,763	7,160	13,200	21	38
1728	George II. .	8,523	9,030	16,800	25	47
1780	George III. .	8,880	9,420	13,330	20	30
1790	„ . .	13,745	14,540	18,650	29	37
1800	„ . .	37,520	39,700	50,350	76	96
1810	„ . .	52,672	55,810	65,840	93	108
1820	George IV.	61,634	61,634	74,270	62	74
1830	William IV. .	59,365	59,365	68,740	50	58
1840	Victoria . .	52,916	52,916	58,110	40	44
1850	„ . . .	58,205	58,205	61,300	43	45
1860	„ . . .	71,090	71,090	64,600	49	45
1870	„ . . .	75,434	75,434	64,400	49	41
1880	„ . . .	81,265	81,265	81,265	47	47
1883	„ . . .	89,004	89,004	89,004	49	49

The "present value" in the above table is regulated according to prices since 1201. See *Prices*.

The various items of British revenue for 1882 and 1883 are stated in detail in Appendix, under the title of *Finances*.

Digitized by Google

B.—FRANCE.

Date.	Reign.	Revenue, Thousands Omitted.	Population, Thousands Omitted.	Shillings per Inhab.
1252 . .	Louis IX.	£140	10,150	½
1597 . .	Henri IV.	3,760	14,500	5
1742 . .	Louis XV.	13,703	22,000	13
1828 . .	Charles X.	38,400	31,600	24
1840 . .	L. Philippe.	46,400	34,100	27
1860 . .	Napoleon III.	68,500	37,290	37
1882 . .	Republic.	112,300	37,430	60

For other countries see *Finances*.

RIBBONS.—The value manufactured has been as follows (thousands omitted) :—

	1872.	1881.
France	£4,920	£5,016
Germany . . .	2,810	2,420
Switzerland . . .	2,590	2,230
Austria	920	710
Great Britain . . .	800	800
United States . . .	100	3,430
Other countries . .	400	900
Total . . .	£12,540	£15,506

RICE.

A.—PRODUCTION AND CONSUMPTION (THOUSANDS).

	Acres.	Tons. Crop.	Tons. Consumption.	Tons. Exportation.
India . . .	22,600	16,800	15,700	1,100
Ceylon . .	900	480	330	150
Java . . .	5,200	2,740	2,200	540
Manilla . .	3,140	1,800	1,750	50
Japan . . .	6,790	3,450	3,250	200
Italy . . .	570	710	560	150
Spain . . .	52	80	80	...
United States .	120	90	90	...

The consumption in Europe has doubled since 1870, and is now nearly 2 million tons per annum.

B.—CONSUMPTION IN UNITED KINGDOM.

Year.	Tons.	Lbs. per Inhab.	Price per Cwt.
1860 . . .	18,100	1½	...
1870 . . .	95,200	7	...
1880 . . .	221,000	14	...

Rice has been successfully grown in the Thames Valley near Windsor.

Digitized by Google

RIFLE.—The competition for the Elcho Shield by the best shots in the 3 kingdoms in 1883 resulted as follows:—Irish 1600, Scotch 1589, English 1564; each nation being represented by 8 champions.

RIOTS.

1346. Citizens of Mayence burn alive 12,000 Jews.

1780. Lord George Gordon fires London in 36 quarters: 285 rioters killed by troops.

1882. Rioters in Russia destroy Jewish property worth 16 millions sterling; at Warsaw 900 shops sacked.

1882. Riots at Alexandria: 460 Europeans killed by Arabs, and city burnt. The indemnities awarded to 9100 claimants summed up £9,200,000, of which 31 per cent. to Greeks, 24 per cent. to Italians, and 5 per cent. to English.

RIVERS.

A.—Volume of Water.

	Basin, Sq. Miles, Thousands Omitted.	Outflow, Million Cub. Feet per Hour.		Basin, Sq. Miles, Thousands Omitted.	Outflow, Million Cub. Feet per Hour.
Amazon	1,920	3,700	Don	220	430
La Plata	1,560	3,100	Dnieper	170	450
Mississippi	1,170	2,070	Dwina	124	150
St. Lawrence	340	1,670	Rhine	89	230
Oby	1,370	1,200	Vistula	75	160
Volga	653	1,120	Loire	45	120
Yangzekiang	742	1,100	Rhone	43	180
Nile	708	560	Elbe	59	100
Ganges	443	700	Seine	26	80
Danube	312	960	Thames	6	40
Euphrates	243	420	Tiber	5	30

3 Tibers = 1 Seine.
3 Seines = 1 Rhine.
3 Rhines = 1 Ganges.

3 Ganges = 1 Mississippi.
2 Mississippis = 1 Amazon.
1 Amazon = 16 Rhines.

B.—Currents.

	Feet, per Minute.	Miles, per Hour.
Seine, Paris	135	1·5
Thames, London	180	2·0
Tiber, Rome	200	2·2
Danube, Ebersdorf	210	2·3
Loire (average)	260	2·9
Rhone „	390	4·3
Durance „	510	5·7
Rhine „	540	6·0
Amazon „	780	8·7

Digitized by Google

C.—Length in Miles.

Amazon . .	3,270	Hudson . .	280	Plata . . .	2,130
Amoor . . .	2,240	Indus . . .	1,720	Po	356
Bramapootra .	1,560	Jenisei . .	2,100	Rhine . . .	715
Columbia . .	1,090	Kiang-ku . .	1,050	Rhone . . .	450
Congo . . .	1,400	Lena . . .	2,500	St. Lawrence .	1,930
Danube . . .	1,540	Loire . . .	549	Seine . . .	429
Dnieper . .	1,070	Mackenzie .	1,600	Senegal . . .	850
Don	985	Magdalena .	820	Severn . . .	210
Douro . . .	490	Mississippi .	2,250	Shannon . .	220
Ebro	470	Niger . . .	2,300	Tagus . . .	570
Elbe	615	Nile . . .	2,750	Thames . . .	204
Euphrates . .	1,360	Norte . . .	1,250	Tiber . . .	210
Ganges . . .	1,350	Oby . . .	2,800	Vistula . . .	601
Garonne . .	400	Orange . .	1,050	Volga . . .	1,990
Guadiana . .	320	Orinoco . .	1,150	Yang-kiang .	2,700
Hoang-ho . .	2,400	Oxus . . .	1,300	Zambesi . .	950

ROADS.

A.—Highways of Nations.

	Miles (Thousands).				Miles of Way.	
	Roads.	Rail-ways.	Water-ways.	Total.	Per 10,000 Inhab.	Per 100 Sq. Miles.
United Kingdom .	142	18	5	165	51	140
France	238	18	8	264	70	130
Germany . . .	265	21	17	303	67	150
Russia	65	15	22	102	13	5
Austria	66	12	3	81	22	30
Italy	74	5	2	81	28	72
Spain and Portugal	16	6	2	24	12	11
Belgium	5	3	1	9	17	80
Holland	3	1	1	5	13	25
Denmark . . .	2	1	...	3	16	21
Sweden	35	4	1	40	90	24
Norway	14	1	...	15	80	12
Europe . . .	925	105	62	1,092	35	27
United States . .	260	104	21	385	75	10
Canada	6	8	4	18	42	½
India	58	11	5	74	3	5
Total . .	1,249	228	92	1,569	28	12

The cost of road-making is about £800 a mile in England, £920 in France, and £130 in Italy. The maintenance averages £15 in England and £7 in France per mile per

Digitized by Google

annum. English main-roads, according to Macadam, cost £1760 per mile. French roads are of 4 classes, and cost as follows:—

	Width.	Cost per Mile.
1st class.	50 feet.	£1,900
2nd „	40 „	1,200
3rd „	33 „	800
4th „	25 „	400

Between 1830 and 1880 France spent 180 millions sterling on common high-roads.

B.—High-Roads in England.

	Miles.		
	Main.	Ordinary.	Total.
1813 . . .	19,700	95,100	114,800
1839 . . .	21,962	104,772	126,734
1870 . . .	15,125	102,615	117,740

The development of railways seems to have diminished the mileage of roads.

C.—Waggon Draught per Ton.

	Lbs.		Lbs.
Well-made pavement . . .	33	Road of stone and clay . .	65
Macadamised road . . .	46	Road thickly gravelled . .	147

ROUBLES.

Year.	Issue, Millions.	Value, Pence.	Year.	Issue, Millions.	Value, Pence.
1774 . .	20	38	1843 . .	600	12
1786 . .	100	36	1844 . .	180	35
1796 . .	160	24	1850 . .	310	33
1800 . .	210	18	1860 . .	690	30
1810 . .	580	12	1870 . .	720	28
1817 . .	870	9	1880 . .	1,180	24
1823 . .	605	10	1883 . .	1,130	23

The conversion of 1843 consisted in calling in the old notes and giving 30 new roubles for 100 old ones.

ROUND TOWERS.—There are 45 in Ireland: the smallest is St. Kevin's, Co. Wicklow, 46 feet high by 12 feet diameter; the greatest is at Kilmacduagh, Galway, 108 feet high by 18½ feet diameter.

Digitized by Google

RYE.

	Acres, Thousands Omitted.	Million Bushels.	Bushels. Per Acre.	Bushels. Per Inhab.
France	3,800	80	21	2·2
Germany	15,100	240	16	5·2
Russia	72,200	680	9	8·2
Austria	9,300	130	14	3·6
Italy and Spain	3,600	68	19	1·5
Belgium and Holland	1,220	28	23	3·0
Scandinavia	1,800	40	22	4·8
Roumania	1,100	24	22	4·2
Europe	108,130	1,290	12	4·2
United States	2,100	31	15	0·6
Other countries	5,000	87	17	...
Total	115,230	1,408	13	...

The rye-crop of the world is worth 232 millions sterling, and feeds 180 millions of people.

S

SADDLERY.—The value annually exported from Great Britain has been:—

Years.	Per annum.	Years.	Per annum.
1868–71	£370,000	1876–79	£395,000
1872–75	408,000	1880–82	466,000

SALMON.

The annual fishery in the United Kingdom is as follows—

	Tons.	Value.
England	360	£40,000
Scotland	2,110	232,000
Ireland	1,130	120,000
Total	3,600	£392,000

London consumes more than half, namely, 1840 tons yearly. England imports 150 tons per annum from Norway. Salmon have been caught in the Tay weighing 70 lbs., but the average weight of this fish is only 8 lbs. The exportation of tinned salmon from California exceeds 10 million lbs. yearly, of which one-half goes to England, one-fourth to the Continent, and the rest to New York, &c. The quantity has doubled since 1875. This is irrespective of 6 million lbs. annually consumed in California.

Digitized by Google

SALT.

A.—Production and Consumption.

	Tons (Thousands Omitted). Production.	Consumption.	Lbs. Consumed per Inhab.	Salt Tax.	Per Inhab., Pence.
U. Kingdom	2,280	1,230	80	...	...
France .	820	800	50	£642,000	4
Germany .	515	500	25	1,805,000	10
Russia . .	630	700	19	2,110,000	6
Austria .	260	220	14	3,360,000	22
Italy . .	240	240	18	3,280,000	28
Spain and Port.	420	160	17	...	...
U. States .	750	930	39	...	...
India . .	540	910	9	6,750,000	8

B.—Salt in Great Britain.

Period.	Average Production, Tons per Annum.	Duty per Ton.	Price per Ton.	Lbs. Consumed per Inhabitant.
1800–1806 . .	203,000	£30	£32	16
1807–1815 . .	230,000	30	32	16
1816–1823 . .	257,000	30	32	16
1824–1840 . .	410,000	...	1	19
1841–1860 . .	880,000	...	16s.	32
1861–1870 . .	1,540,000	...	14s.	58
1871–1880 . .	2,020,000	...	12s.	72

The consumption in the United Kingdom averages 40 lbs. per inhabitant for cooking or condiment, the rest being used for chemicals, manure, &c. Reduced death-rate and higher efficiency of workmen are results of the greater consumption of salt. Hence the salt taxes in various European countries are most injurious to public interests.

C.—Salt in Sea-Water.

Sea.	Percentage of Salt.	Salt per Ton of Water, lbs.	Sea.	Percentage of Salt.	Salt per Ton of Water, lbs.
Caspian . .	0·5	11	Red . .	4·3	93
Black . .	1·2	26	Dead . .	8·5	187
Baltic . .	1·3	28	Mediterranean	3·9	85
Eng. Channel .	3·3	72	Atlantic .	3·7	81

SARDINES.

	Annual Fishery. Million Fish.	Tons Weight.
Spain	1,260	52,000
France	980	41,000

The exportation from France averages 450 million per annum, say 20,000 tons.

Digitized by Google

SAVINGS-BANKS.

A.—Amount of Deposits.

	Thousands Omitted.				Amount per Inhabitant.	
	1850.	1860.	1870.	1882.	1860.	1882.
	£	£	£	£	s.	s.
U. Kingdom .	30,100	41,300	53,100	80,400	28	45
France . .	3,200	13,500	27,400	61,200	8	33
Germany . .	5,400	16,400	35,000	105,300	10	47
Russia . .	...	1,100	2,400	3,200	...	1
Austria . .	19,600	28,000	40,300	85,100	19	46
Italy . .	2,200	12,400	14,800	33,600	12	24
Switzerland .	2,300	5,100	11,600	12,200	47	88
Spain . .	...	200	1,000	2,400	...	3
Belg. and Holl.	1,800	2,200	4,500	7,300	5	16
Scandinavia .	3,100	7,200	14,600	27,300	25	67
Europe .	67,700	127,400	204,700	418,000	11	27

B.—Number of Depositors.

	Thousands Omitted.				Percentage, Ratio to Pop.	
	1850.	1860.	1870.	1881.	1860.	1881.
U. Kingdom .	1,060	1,580	2,620	3,715	5·5	10·6
France . .	630	1,100	2,100	3,900	3·3	10·3
Germany .	980	1,500	2,200	4,200	4·3	9·4
Russia . .	...	100	150	200	0·2	0·3
Austria . .	500	1,100	1,300	1,850	3·6	6·4
Italy . .	170	380	571	1,970	1·5	6·8
Switzerland .	181	355	512	1,080	4·2	35·3
Spain . .	...	80	200	250	0·5	1·5
Belg. and Holl.	90	100	180	310	1·2	3·3
Scandinavia .	300	400	900	1,600	6·8	18·1
Europe .	3,911	6,695	10,833	19,075	3·0	6·5

The Savings Banks in the United States had 2,200,000 depositors in 1873 with 155 millions sterling of deposits, and the latter have now risen to 202 millions sterling. The French Savings Banks in January 1883 counted 4,352,000 depositors.

Digitized by Google

C.—Savings Banks of United Kingdom.

Year.	Amount of Deposits, Thousands.			Shillings per Inhabitant.		
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.
1830 . .	£12,600	...	£910	18	...	2
1840 . .	20,700	£520	2,200	25	4	5
1850 , .	27,680	1,080	1,360	30	7	4
1860 . ,	36,700	2,410	2,140	37	16	7
1870 . .	46,230	4,130	2,690	40	25	10
1881 , ,	69,000	7,560	3,800	54	40	15

D.—Savings in Ireland.

Thousands Omitted.

Year.	Bank Deposits.	Government Stocks.	Total.	Amount per Inhab.
1860 .	£15,609	40,104	55,713	£9 19 0
1865 .	18,619	37,513	56,132	10 0 6
1870 .	24,366	36,497	60,863	11 5 0
1875 .	33,519	33,710	67,229	12 14 0
1881 .	30,161	31,605	61,766	12 2 0

SCIENCE.—United Kingdom in 1881 had 1355 schools of science, with 66,600 pupils; annual cost, £295,000, or 89 shillings per pupil.

SEA.

	Yards, Depth.			Yards, Depth.	
	Average.	Maximum.		Average.	Maximum.
Atlantic . .	4,026	7,750	Irish . . .	240	710
Pacific . .	4,252	9,310	English Channel	110	300
Indian . .	3,658	6,040	German . .	96	...
Arctic . . .	1,690	5,300	Levant . . .	72	...
Antartic , .	3,000	3,950	Adriatic . .	45	...
Mediterranean	1,476	2,860	Baltic . . .	43	...

The Southern Ocean below Cape Horn reaches a depth of 5500 yards, and off Cape of Good Hope, 5700 yards. The average of the Bay of Biscay is 1200 yards.

SEALS.

Fishery.	Annual Slaughter.	Value.	Tons Oil.
Canadian . .	460,000	£280,000	9,200
Norwegian . .	80,000	50,000	1,600
Falkland Islands .	5,000	3,000	100
Montevideo . .	5,000	3,000	100
Total . .	550,000	£336,000	11,000

Digitized by Google

The skins are worth 2 shillings each, the oil, £25 per ton. One fishing vessel sometimes kills as many as 50,000 in a season, off Nova Scotia. The barbarous practice of slaughtering seals while suckling their young, threatens to exterminate the breed.

SEAMEN.

A.—General Summary.

	Thousands Omitted.				Ratio to Population, per Cent.
	Navy.	Merchant.	Coast, Fishing.	Total.	
United Kingdom .	45	193	167	405	1·11
France	43	35	94	172	0·45
Germany	8	40	27	75	0·16
Russia	26	23	74	123	0·15
Austria	10	7	9	26	0·07
Italy	15	52	74	141	0·50
Spain	7	23	44	74	0·45
Portugal	4	5	4	13	0·30
Holland	7	18	13	38	0·95
Denmark	1	7	5	13	0·70
Sweden and Norway	9	79	143	231	3·55
Greece	1	11	15	27	1·52
Turkey	4	10	3	17	0·22
Europe	180	503	672	1,355	0·42
United States . .	8	120	54	182	0·35
Canada	...	50	65	115	2·54
Brazil	2	6	8	16	0·18
Argentine Republic	1	2	8	11	0·55
Australia	...	11	3	14	0·48
Total . .	191	692	810	1,693	0·45

If marines and coast-guards were added, the total would fall little short of 2 millions of men, or very nearly 3 per cent. of the able-bodied men of the Christian world.

B.—Seamen and Trade of United Kingdom.

Year.	Seamen.	Trade, Millions £.	Trade per Seaman.
1850 . .	151,400	169	£1,120
1860 . .	171,600	318	1,850
1870 . .	195,900	459	2,340
1880 . .	192,900	571	2,950

Some of the above trade is done on foreign bottom, but it is balanced by the trade between foreign countries done on British bottom, not included above.

Digitized by Google

C.—Deaths of British Merchant Sailors (1879).

Age.			Cause.		
Under 21 . .	624 =	17 p. c.	Drowned . .	2,001 =	54 p. c.
21 to 30 . .	1,488 =	40 ,,	Illness . . .	1,386 =	37 ,,
31 ,, 50 . .	1,064 =	29 ,,	Suicide . .	33 =	1 ,,
Over 50 . .	516 =	14 ,,	Various . .	272 =	8 ,,
Total . .	3,692 =	100 ,,	Total . .	3,692 =	100 ,,

The death-rate was 19 per 1000, or almost double the corresponding rate for age in England. Deducting those drowned, the rate would be lower than on land.

SERFS.

A.—Russian Serfs in 1861.

	Thousands Omitted.		
	Male.	Female.	Total.
Crown serfs . .	11,168	11,683	22,851
Appanage . .	1,624	1,702	3,326
Held by nobles .	10,674	11,081	21,755
Total . .	23,466	24,466	47,932

B.—Noblemen's Serfs in 1861.

Nobles.	Serfs.	Average.
23,100	18,575,000	802
36,150	2,520,000	70
43,800	660,000	15
103,050	21,755,000	211

C.—Cost of Redemption.

Mortgages remitted	£30,400,000
Government scrip	20,230,000
Paid by serfs	10,470,000
Balance due	3,900,000
Indemnity award	£65,000,000

The indemnity to the nobles was £3 per serf. The lands are mortgaged to the State till 1912. The lands ceded to Crown serfs are mortgaged only till 1901. The above item of "mortgages remitted" is the amount due by nobles to the Imperial Bank and cancelled.

Digitized by Google

D.—Lands held by Freed Serfs (1879).

Title.	Holders.	Acres.	Average Acres.
Crown-gift . .	6,117,000	84,200,000	14
Appanage . .	1,625,000	30,200,000	18
Purchase . . .	10,137,000	65,500,000	6½
Beggar-lots . .	1,840,000	6,440,000	3½
Total . .	19,719,000	186,340,000	9

In return for crown-gift the holders have to pay 50 per cent. extra poll-tax till 1902. Beggar-lots are lands given gratis by the nobles to the peasants, rather than sell farm-lots at £1 per acre to them.

E.—Austrian Servitude (1840).

	Value.
Labour (2 days per week)	£35,000,000
Tithe of crops, &c.	12,000,000
Male tribute, timber	1,400,000
Female tribute, spun wool	1,800,000
Fowl, eggs, butter	1,000,000
Total . . .	£51,200,000

There were 7 million serfs, whose tribute averaged more than £7 per head, which was, in fact, the rent of their farms. Some Bohemian nobles had as many as 10,000 serfs. The redemption was effected by giving the nobles 5 per cent. Government scrip, and land then rose 50 per cent. in value.

F.—German Serfs.

In 1848 the State took 60 million acres from the nobles, leaving them still 25 million acres, and gave the former among the serfs. Indemnity as follows:—

1. Government scrip, £180 for each serf family, to nobleman.
2. Land-tax, £3 per annum, transferred to peasant.
3. Interest, £7 per annum for 47 years, to be paid by peasant to the State, being 4 per cent. on cost of redemption.

SEWAGE.

	Sewers, Cost per Mile.	Tons of Sewage Discharged Weekly.
Manchester	£1,240	770,000
Preston	2,000	140,000
London	5,550	5,500,000
Blackburn	4,700	150,000

Digitized by Google

The system of sewage farms requires an acre per 500 inhabitants, say 1000 acres for a city like Manchester or Liverpool. Sewage is supposed to have a market value of one penny per ton.

SEXES.

A.—Ratio to Population.

	Per 1000.			Per 1000.	
	Male.	Female.		Male.	Female.
England . .	485	515	Italy . . .	503	497
Scotland . .	481	519	Spain . . .	496	504
Ireland . .	490	510	Belgium . .	501	499
United Kingdom .	485	515	Holland . .	490	510
France . . .	496	504	Denmark . .	491	509
Germany . .	489	511	Sweden . .	484	516
Russia . . .	497	503	Norway . .	491	509
Austria . .	485	515	United States .	506	494

B.—United Kingdom, Population in Sexes.

Thousands Omitted.

	Males.			Females.		
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.
1821	5,850	980	3,340	6,140	1,100	3,450
1831	6,770	1,110	3,790	7,120	1,240	3,970
1841	7,770	1,240	4,010	8,130	1,370	4,150
1851	8,780	1,370	3,190	9,140	1,510	3,360
1861	9,801	1,453	2,832	10,318	1,616	2,957
1871	11,059	1,603	2,640	11,653	1,757	2,773
1881	12,625	1,798	2,523	13,343	1,937	2,637

Summary for United Kingdom.

	Thousands Omitted.			Ratio per 1000.	
	Males.	Females.	Total.	Males.	Females.
1821	10,170	10,690	20,860	487	513
1831	11,672	12,330	24,002	486	514
1841	13,020	13,650	26,670	488	512
1851	13,340	14,010	27,350	489	511
1861	14,086	14,891	28,977	485	515
1871	15,302	16,183	31,485	486	514
1881	16,946	17,917	34,863	485	515

Digitized by Google

SHEEP.

A.—Number and Slaughter.

	Thousands Omitted.			Per 100 Inhab.		Lbs. Mutton per Inhab.
	Number.	Annual Slaughter.	Tons Mutton.	Sheep.	Slaughter.	
United Kingdom .	27,896	11,200	285	79	32	19
France . .	23,370	9,300	165	65	26	10
Germany . .	25,200	10,100	195	55	22	10
Russia . . .	48,820	19,600	370	60	24	10
Austria . .	21,418	8,600	160	58	23	10
Italy . . .	6,980	2,800	55	25	10	4
Spain and Portugal	25,420	10,200	120	125	50	13
Belgium and Holl.	1,530	600	16	16	6	3
Scandinavia .	4,990	2,000	43	57	23	11
Roumania, &c. .	6,180	2,500	50	77	31	16
Greece . .	2,292	900	15	138	55	17
Europe . .	194,096	77,800	1,474	65	26	11
United States .	49,237	14,000	340	95	27	14
Canada . .	3,330	1,300	35	75	30	17
Australia . .	65,915	4,000	90	2,410	140	70
River Plate .	76,230	6,000	100	2,540	200	72
Algeria . .	8,788	3,000	55	290	100	40
Cape Colony .	11,280	2,400	40	1,070	230	90
The World .	394,832	108,500	2,134	109	30	12

The United States census report for 1880 gives 35 million sheep; the agricultural report for 1882 gives 49 millions.

B.—Sheep in United Kingdom and United States.

	Number, Thousands Omitted.		Sheep per 100 Inhabitants.	
	U. Kingdom.	U. States.	U. Kingdom.	U. States.
1840 . .	24,190	12,897	90	75
1850 . .	29,780	21,720	106	94
1860 . .	32,960	22,470	112	72
1870 . .	34,666	28,480	110	72
1882 . .	27,896	49,237	79	95

C.—Sheep in Australia, Cape, and La Plata.

Thousands Omitted.

	Australia.	Cape Colony.	River Plate.	Total.
1830 . .	770	420	1,870	3,060
1840 . .	3,360	2,340	4,620	10,320
1850 . .	10,140	4,270	8,490	22,900
1860 . .	29,870	6,220	17,340	53,430
1870 . .	51,294	10,160	55,780	117,234
1882 . .	65,915	11,280	76,230	153,425

Digitized by Google

SHIPPING.

A.—Tonnage since 1820: The World.

Thousands Omitted.

	Sailing.	Steam.	Total.	Effective.*	Steam ratio.
1820 . .	3,140	6	3,146	3,170	1 per cent.
1830 . .	3,022	28	3,050	3,164	4 ,,
1840 . .	4,560	116	4,676	5,140	11 ,,
1850 . .	6,513	392	6,905	8,473	23 ,,
1860 . .	9,586	820	10,406	13,686	30 ,,
1870 . .	13,868	1,918	15,576	23,458	41 ,,
1881 . .	15,002	5,644	20,646	43,222	66 ,,

B.—British and Foreign Flags.

Seagoing Tonnage (Thousands Omitted).

Year.	British.		Other Flags.		Total Nominal.	
	Steam.	Sailing.	Steam.	Sailing.	British.	Other Flags.
1840 . .	95	3,216	21	1,344	3,311	1,365
1850 . .	188	4,045	204	2,468	4,233	2,672
1860 . .	502	5,211	318	4,375	5,713	4,693
1870 . .	1,203	5,947	715	7,921	7,150	8,636
1881 . .	3,105	5,430	2,539	9,572	8,535	12,111

Carrying-power.

Year.	Tons (Thousands Omitted).		Percentage.		
	British.	Other Flags.	British.	Other Flags.	Total.
1840 . .	3,691	1,449	74	26	100
1850 . .	4,985	3,488	58	42	100
1860 . .	7,721	5,965	56	44	100
1870 . .	11,962	11,496	51	49	100
1881 . .	20,955	22,267	49	51	100

In the above tables British includes not only vessels of the United Kingdom but also Colonial. The net tonnage of steamers is given, which is only 70 per cent. of the gross tonnage.

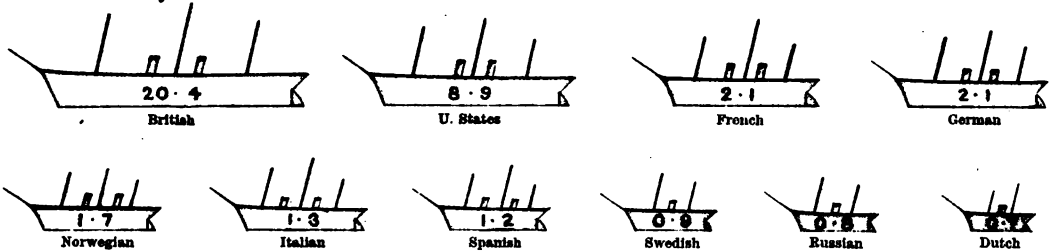
* Effective tonnage is ascertained by multiplying steam tonnage by 5 and adding the product to sailing tonnage. Steamers have 5 times the carrying-power of sailing-vessels of equal tonnage, a steamer making 3 ocean trips, or 6 short trips, for one of a sailing-vessel.

Digitized by Google

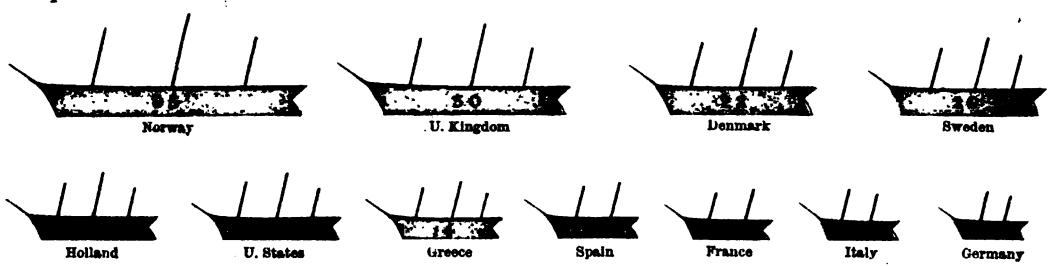
SHIPPING.

Carrying power.

Millions of tons.



Tons per 100 *inhabitants.*



Digitized by Google

Digitized by Google

C.—Shipping of All Flags.

Flag.	Nominal Tonnage, Thousands.			Carrying Power.		
	Sailing.	Steam.	Total.	Tons, Thousands.	Ratio.	Tons per 100 Inhab.
U. Kingdom .	3,688	3,004	6,692	18,110	42·1	51
France . .	642	278	920	2,032	4·7	5
Germany . .	966	216	1,182	2,046	4·7	4
Russia . .	481	73	554	846	2·0	1
Austria . .	248	62	310	558	1·3	1½
Italy . .	922	77	999	1,307	3·0	5
Spain . .	374	164	538	1,194	2·8	7
Portugal . .	71	11	82	126	0·3	3
Belgium . .	10	65	75	335	0·8	6
Holland . .	332	83	415	747	1·7	19
Denmark . .	175	51	226	430	1·0	22
Sweden . .	447	84	531	867	2·0	20
Norway . .	1,456	55	1,511	1,730	4·0	95
Greece . .	201	10	211	251	0·6	14
Europe . .	9,894	4,151	14,045	30,579	71·0	10
United States .	2,856	1,211	4,067	8,910	20·6	17
Canada . .	1,233	78	1,311	1,623	3·8	38
Australia . .	201	77	278	586	1·3	20
India, Cape, &c.	427	28	455	567	1·3	...
Japan . .	151	41	192	356	0·8	1
Brazil, Chili, &c.	240	58	298	530	1·2	...
Total . .	15,002	5,644	20,646	43,151	100·0	...

D.—Trade and Shipping Compared (the World).

Year.	Merchandise, Millions £.	All Flags, Tonnage, Thousands.		Goods carried per Ton.	
		Nominal.	Effective.	Nominal.	Effective.
1830 . .	172	3,050	3,164	£57	£55
1840 . .	258	4,676	5,140	55	50
1850 . .	390	6,905	8,473	56	46
1860 . .	625	10,406	13,686	60	45
1870 . .	884	15,576	23,458	57	38
1881 . .	1,240	20,646	43,222	60	29

By referring to *Ballast*, it will be seen that one-fifth of all vessels enter port in ballast. Moreover, the great steam-boat lines are used more for passengers than cargo. This explains why the increased tonnage carrying-power on sea is much greater than the growth in merchandise carried over sea. Coal and iron are also more largely carried than before, being articles of inferior value.

Digitized by Google

E.—Vessels over 100 Tons (1881).

	Number.			Tons (Net) per Vessel.		
	Steam.	Sail.	Total.	Steam.	Sail.	Total.
Great Britain .	2,869	11,893	14,762	930	352	474
French . .	335	2,772	3,107	820	194	270
German . .	277	3,113	3,390	740	303	342
Russian . .	166	1,875	2,041	501	222	251
Austrian . .	82	599	681	770	401	440
Italian . .	103	2,936	3,039	701	308	325
Spanish . .	226	1,578	1,804	595	205	253
Portuguese .	17	424	441	640	235	250
Belgian . .	40	29	69	1,118	450	810
Dutch . .	111	1,112	1,223	723	295	340
Danish . .	109	1,172	1,281	450	152	177
Swedish . .	258	1,979	2,237	270	201	210
Norwegian .	148	4,160	4,308	331	330	330
Greek . .	20	1,672	1,692	476	192	194
Turkish . .	10	374	384	558	166	180
Europe .	4,771	35,688	40,459	820	301	361
United States .	548	5,958	6,506	690	342	365
Canada . .	918	6,459	7,377	128	184	155
Various . .	155	479	634	440	332	360
Total . .	6,392	48,584	54,976	690	288	330

F.—British Merchant Navy.

Year.	Vessels.	Tons.	Sailors.	Tons per		Reign.
				Ship.	Sailor.	
1588 . .	470	37,400	...	80	...	Elizabeth.
1610 . .	910	83,000	...	90	...	James I.
1666 . .	1,320	120,000	...	90	...	Charles II.
1688 . .	2,620	210,000	...	80	...	James II.
1702 . .	3,260	261,000	...	80	...	Anne.
1760 . .	5,730	487,000	...	85	...	George III.
1800 . .	17,410	1,856,000	140,000	106	14	,,
1810 . .	23,703	2,426,000	162,000	102	15	,,
1820 . .	25,374	2,654,000	175,000	105	15	George IV.
1830 . .	23,721	2,533,000	155,000	107	16	William IV.
1840 . .	28,962	3,311,000	201,000	114	17	Victoria.
1850 . .	34,288	4,233,000	239,000	124	18	,,
1860 . .	29,469	5,713,000	230,000	193	25	,,
1870 . .	32,920	7,150,000	261,000	216	27	,,
1881 . .	30,531	8,535,000	270,000	280	31	,,

This includes colonial shipping.

Digitized by Google

G.—Shipping of United Kingdom.

Year.	Vessels.	Thousands Omitted.		Tons per		Tons Carrying Power.	
		Tons.	Seamen.	Vessel.	Seaman.	(Thousands Omitted).	Per 100 Inhab.
1810	20,253	2,211	145	105	15	2,211	12
1830	19,174	2,202	131	114	17	2,280	10
1850	25,984	3,565	148	138	24	3,950	15
1870	22,180	5,691	196	256	29	9,720	31
1881	19,311	6,490	193	336	33	18,110	51

The carrying-power has grown almost eight-fold since 1810, and if we required the same ratio of seamen we should need at present 1,300,000 sailors to do the work.

H.—Earnings of Shipping.

Flag.	Thousands Omitted.				Ratio.
	Tons Carried.	Freight.	Passengers.	Total.	
British . .	63,190	£61,400	£12,300	£73,700	55·2
French . .	6,100	5,900	1,200	7,100	5·4
German . .	6,200	6,000	1,200	7,200	5·4
Italian . .	3,900	3,700	800	4,500	3·3
Spanish . .	3,600	3,500	700	4,200	3·1
United States .	37,000	10,500	15,500	26,000	19·6
Various . .	9,500	8,500	1,800	10,300	8·0
Total .	129,450	£99,500	£33,500	£133,000	100·0

British includes colonial. The table comprises all trade.

I.—United States Steamboat Traffic (1880).

	Steamers.	Thousands Omitted.				
		Tonnage.	Passengers.	Goods, Tons.	Earnings, £.	Wages, £.
Lakes . . .	947	222	1,420	4,380	2,520	690
Mississippi .	681	132	2,710	4,820	2,460	790
Ohio . . .	473	107	4,030	2,410	1,580	585
N. England .	463	119	15,470	2,630	1,620	560
Middle States	1,459	433	135,720	7,190	6,660	1,830
Gulf . . .	1,116	208	9,160	4,110	2,870	965
Total .	5,139	1,221	168,510	25,540	17,710	5,420

The crews mustered 57,100 men, their wages averaging £85. The steamers carried merchandise 21 times their own tonnage, besides passengers. Each steamer carried in the year 33,000 passengers and 5000 tons of merchandise.

Digitized by Google

K.—Size, Death-rate, &c., of Ships.

Flag.	Average Tonnage.		Percentage Annual Loss.		Life of Ship, Years.	Tons Carried per Seaman.
	Steamer.	Sailing.	Steamer.	Sailing.		
U. Kingdom .	520	206	2·94	3·93	26	280
France . .	705	192	2·47	4·04	20	174
Germany .	525	228	2·77	4·04	23	154
Holland . .	660	290	3·84	4·49	22	123
Scandinavia .	360	230	1·96	3·20	30	106
Italy . .	518	220	1·74	2·94	28	75
United States .	237	326	4·06	5·45	18	308

The apparent higher efficiency of American seamen is because the traffic is on internal waters, mostly for short distances. In reality the English seaman carries most. See *Wrecks*.

L.—Working Expenses.

For a vessel of 1000 tons, crew 20 men, the monthly expenses are as follows:—

British . .	£145	German . .	£135	Italian . .	£ 95
French . .	135	Austrian . .	125	American .	200

M.—Ship-building.

Year.	Tons.		Tons per Vessel.	
	British.	American.	British.	American.
1850 . .	134,000	272,000	192	201
1860 . .	212,000	213,000	208	198
1870 . .	343,000	277,000	353	152
1882 . .	1,194,000	281,000	770	250

Steamers cost from £16 to £24 per ton. A first-class wooden ship can be built in Canada for £9 per ton; in United States, £11.

The shipbuilding of Great Britain in 1880–82 was as follows:—

	Tons.		
	1880.	1881.	1882.
Clyde . . .	237,000	332,000	389,000
Wear . . .	140,000	148,000	212,000
Tyne . . .	149,000	177,000	208,000
Various . .	180,000	203,000	385,000
Total . .	706,000	860,000	1,194,000

The new vessels finished in British yards in 1882 represented a carrying-power of 5 million tons, being four-fifths

Digitized by Google

steamers. The world builds about 1,800,000 tons of registered shipping per annum, or 9 per cent. on the tonnage afloat, of which Great Britain builds two-thirds, viz. :—

	Tonnage Built in 1882.		Ratio.	
	Nominal.	Carrying-power.	Nominal.	Carrying-power.
British . . .	1,194,000	5,040,000	66·0	72·0
American. . .	281,000	1,080,000	15·6	15·4
Other flags . .	330,000	890,000	18·4	12·6
Total . . .	1,805,000	7,010,000	100·0	100·0

The shipping lost or broken up yearly averages 1,200,000 tons, with a carrying-power of 1,800,000 tons. The net increase of carrying-power in 1882 exceeded 5 million tons.

N.—Registered Shipping of Ports.*

	Tonnage, Thousands Omitted.				
	Sail.	Steam.	Total.	Carrying Power.	Ratio of Carrying Power.
Liverpool . .	1,080	520	1,600	3,680	8·6
London . .	620	570	1,190	3,470	8·1
Glasgow . .	350	380	730	2,250	5·2
New York . .	530	210	740	1,580	3·7
Marseilles . .	60	160	220	860	2·0
Hull . . .	40	150	190	790	1·8
Newcastle . .	60	140	200	760	1·8
Sunderland .	110	110	220	660	1·5
Hamburg . .	140	70	210	490	1·1
Bremen . .	160	60	220	460	1·1
Greenock . .	170	40	210	370	0·9
San Francisco .	110	50	160	360	0·8
Philadelphia .	110	50	160	360	0·8
Trieste . .	30	60	90	330	0·8
Leith . . .	20	60	80	320	0·7
Havre . . .	70	50	120	320	0·7
New Brunswick	270	10	280	320	0·7
Barcelona . .	100	40	140	300	0·7
Genoa . .	120	30	150	270	0·6
Odessa . .	20	50	70	270	0·6
Amsterdam .	60	40	100	260	0·6
Copenhagen .	40	40	80	240	0·5
Southampton .	30	40	70	230	0·5
Antwerp . .	10	40	50	210	0·5
Aberdeen . .	100	20	120	200	0·5
Bergen . .	60	20	80	160	0·4
Yarmouth .	160	...	160	160	0·4
Other ports .	10,372	2,634	13,006	23,471	54·4
The World .	15,002	5,644	20,646	43,151	100·0

* For tonnage trade of ports see *Entries* and *Ports*.

Digitized by Google

O.—Decline of American Carrying Trade.

Imports and Exports, Millions £, United States.

Year.	American Flag.		Foreign Flags.		Total.	American Ratio, per Cent.
	Imports.	Exports.	Imports.	Exports.		
1860 . . .	48	58	28	25	159	67
1870 . . .	29	38	59	64	190	35
1880 . . .	34	24	121	152	331	17
1882 . . .	30	21	125	144	320	16

SHOT AND SHELL.—One million take 10,000 tons of iron. Great Britain sometimes makes 2 millions in a year.

SICK.

A.—Ratio of Sick.

Per 1000 *Persons.*

London police . . .	26	English rural . . .	53
British infantry . . .	43	Town population . . .	60
French army . . .	45	Jamaica garrison . . .	53
Cayenne convicts . . .	69	Navy at Malta . . .	52
Algiers garrison . . .	70	Russian army . . .	78

The English rural and town population, of course, include all ages, whereas the troops, navy, &c., are usually men in the flower of life.

B.—Sick Population.

Thousands Omitted.

	Sick.	Invalids.	Total.	Percentage of Pop.
England . . .	984	492	1,476	5·7
Scotland . . .	145	72	217	5·7
Ireland . . .	180	90	270	5·3
United Kingdom .	1,309	654	1,963	5·6
France . . .	1,682	841	2,523	6·7
Germany . . .	2,288	1,144	3,432	7·6
Austria . . .	2,360	1,180	3,540	9·4
Italy	1,672	836	2,508	8·9
Spain	990	495	1,485	8·9
Belgium . . .	242	121	363	6·6
Holland . . .	190	95	285	7·1
Denmark . . .	76	38	114	5·7
Sweden and Norway .	214	107	321	4·9
Switzerland . .	126	63	189	6·7
Greece . . .	62	31	93	5·8
United States . .	1,978	989	2,967	5·5
Australia . . .	75	37	112	4·1
Total . . .	13,264	6,631	19,895	7·5

The above table is not official, but computed on Dr. Farr's basis applied to death-rate. It includes all ages, as shown for England in Table E.

Digitized by Google

C.—Days of Sickness per Inhabitant.

Annual Average.

Age.	1845.				1870.		
	Urban.	Rural.	England.	Scotland.	Urban.	Rural.	England.
21–30 . . .	6·3	6·0	6·1	6·0	5·6	5·4	5·5
31–40 . . .	11·4	6·4	8·9	6·2	7·1	7·1	7·1
41–50 . . .	13·4	9·0	11·2	9·5	11·2	10·4	10·8
51–60 . . .	23·2	17·8	20·5	19·9	20·3	20·1	20·2
40 years . .	13·8	9·8	11·7	10·4	11·1	10·7	10·9

D.—Cost of Sickness, per Annum.

	Millions of Days.	Days per Inhab.	Loss of Labour. Millions £.	Loss of Labour. Per Inhab.	Loss Ratio to Income, per Cent.
England . .	281	10·8	31	24s.	3·0
Scotland . .	40	10·8	3½	20	3·0
Ireland . . .	51	10·1	2	8	2·8
United Kingdom	372	10·6	36½	21s.	3·0
France . . .	474	12·6	34	18	3·5
Germany . .	662	14·4	33	15	3·9
Russia . . .	1,680	20·7	42	10	5·5
Austria . . .	688	18·0	30	16	5·0
Italy . . .	460	16·8	13	9	4·5
Spain . . .	272	16·8	8	10	4·5
Belgium . .	68	12·4	4	15	3·5
Holland . .	53	13·4	4	20	3·6
Denmark . .	21	10·8	1½	15	3·0
Sweden and Norway	59	9·3	2½	8	2·5
Switzerland . .	34	12·6	1½	11	3·5
Greece . . .	19	11·0	1	10	3·1
Europe . .	4,862	15·0	211	14	3·9
United States .	540	10·5	41	16	2·9
Australia . .	23	7·9	3	20	2·2
Total . .	5,425	14·2	255	14	3·6

The above table does not include children.

E.—Sickness in Ages, England.

Age.	Number Sick.	Per 100 Inhab.	Aliquot Parts.
Under 5 . .	566,000	16·2	38·4
5 to 20 . .	114,000	1·4	7·7
20 ,, 50 . .	276,000	2·8	18·7
50 ,, 60 . .	129,000	6·8	8·8
60 ,, 70 . .	149,000	12·4	10·1
Over 70 . .	242,000	33·1	16·3
Total . .	1,476,000	5·7	100·0

Digitized by Google

The ratio of sickness rises and falls regularly with death-rate in all countries, as shown by Dr. Farr and Mr. Edmonds at the London Congress of 1860, when the following rule was established:—

Of 1000 persons, aged 30, it is probable 10 will die in the year, in which case there will be 20 of that age sick throughout the year, and 10 invalids.

Of 1000 persons, aged 75, it is probable 100 will die in the year, in which case the sick and invalids of that age will be 300 throughout the year.

For every 100 deaths, let there be hospital beds for 200 sick, and infirmaries for 100 invalids.

SILK.

A.—Production of Raw Silk.

	Thousands Omitted.	
	lbs. Silk.	Value.
China	21,000	£14,500
Japan	4,400	4,100
Italy	6,600	6,600
India and Persia	2,000	1,500
France	1,200	1,200
Turkey, Spain, &c.,	2,800	2,500
Total	38,000	£30,400

B.—Italian Silk Industry.

Italy imports yearly 90 per cent. of the eggs from which her silk crop is obtained.

1 oz. eggs, value 7s., produces 35 lbs. cocoons, or 2¼ lbs. silk.

70 tons eggs at 7s. per oz. cost	£880,000
39,000 tons cocoons produce silk, 5,600,000 lbs., worth	£5,600,000
Profit	£4,720,000
Silk of Italian eggs	1,030,000
Total	£5,750,000

C.—French Silk Industry: Annual Averages.

	Raw Silk, Lbs. Consumed, Thousands Omitted.			Value, Thousands Omitted.		
	Native.	Imported.	Total.	Manufac.	Consump.	Exported.
1830–32	1,620	1,140	2,750	£5,230	£3,920	£1,310
1842–46	2,770	4,070	6,840	12,700	7,440	5,260
1850–52	3,830	6,370	10,200	18,220	9,500	8,720
1868–73	1,200	15,400	16,600	34,600	16,240	18,360
1877–82	1,400	13,800	15,200	27,400	15,300	12,100

Digitized by Google

D.—All Nations.

	Thousands Omitted.				Consump., Shillings per Inhabitant.
	Annual Consump. Raw Silk, Lbs.		Manufac. Value 1881.	Consump. Value 1881.	
	1861–65.	1876–80.			
Great Britain . .	5,500	2,900	£6,800	£15,600	8·8
France	12,300	15,200	27,400	16,200	8·6
Germany . . .	2,100	3,400	4,500	6,000	2·8
Russia	560	1,040	2,100	2,400	0·6
Austria	1,030	2,100	3,800	6,000	3·2
Italy	1,300	1,600	3,100	3,000	2·2
Switzerland . .	100	300	3,400	400	2·8
Spain	350	400	700	900	1·1
Belgium . . .	220	480	900	1,400	5·1
Europe . . .	23,460	27,420	£52,700	£51,900	3·3
United States . .	450	1,820	5,500	12,100	4·5
China	9,000	9,000	15,000	11,200	...
Total	32,910	38,240	£73,200	£75,200	...

SILVER.

A.—Production in 500 Years.

	Tons.	Million £.	Ratio.
Mexico . . .	78,600	608	40·7
Peru, &c. . .	72,000	554	37·3
United States .	11,600	89	6·0
Germany . .	8,470	65	4·4
Austria . . .	7,930	61	4·1
Russia . . .	3,200	24	1·7
Various . . .	11,200	86	5·8
	193,000	1,487	100·0

B.—Periods of Production.

A.D.	Tons.	Increase Period. Tons.	Value of Stock. Million £.	Per Ton.
1600	22,800	—	370	£16,000
1700	60,000	37,200	750	12,500
1800	117,000	57,000	1,120	9,600
1850	150,000	33,000	1,350	9,000
1880	193,000	43,000	1,487	7,700

C.—Production since 1850.

Million £.

	1851–60.	1861–70.	1871–80.	30 years.
Spanish America . .	49	64	70	183
United States . . .	10	16	68	94
Germany and Austria .	15	18	20	53
Various	7	12	22	41
Total . .	81	110	180	371

Digitized by Google

D.—Production and Consumption.

Years.	Production, Tons.	Consumption, Tons. Coinage.	Manufacture.	The East.	Total.
1831–40	5,965	2,700	2,000	2,200	6,970
1841–50	7,804	4,800	2,200	2,400	9,490
1851–60	8,955	...	2,700	11,300	14,140
1861–70	12,201	...	3,100	12,300	15,400
1871–80	22,345	1,200	4,500	10,800	16,500
Total	57,270	8,700	14,500	39,000	62,500

Years.	Production, Million £.	Consumption, Million £. Coinage.	Manufac. ture.	The East.	Total.
1831–40	54	24	18	20	62
1841–50	70	43	20	22	85
1851–60	81	...	24	102	126
1861–70	110	...	28	111	139
1871–80	180	10	36	87	133

The above table shows that since 1830 the supply has not been sufficient, the world melting down 5,230 tons of old candlesticks, &c., for current uses.

For silver-movement since 1860 see *Bullion*.

E.—Production in 1882.

	Tons.	Value.	Ratio.
United States	1,010	£7,770,000	48·8
Spanish America	740	5,720,000	35·7
Germany	150	1,160,000	7·3
Austria	82	620,000	4·0
Various	85	650,000	4·2
Total	2,067	£15,920,000	100·0

F.—Prices since 1501.

Period.	Per Oz., Pence.	Ratio to Gold.	Period.	Per Oz., Pence.	Ratio to Gold.
1501–60	85	11·1 to 1	1801–40	60¼	15·7 to 1
1561–1620	80	11·8 ,,	1841–60	60⅜	15·4 ,,
1621–80	65	14·5 ,,	1861–70	60½	15·6 ,,
1681–1740	62	15·1 ,,	1871–80	56	16·7 ,,
1741–1800	63	14·8 ,,	1881–82	51⅞	18·0 ,,

In 1876 the price fell to 46½ pence, say 20 per 1 as compared with gold. In 1873–79 the German Government sold 3220 tons of silver coin for £28¼ millions, losing £5 millions in the business.

Digitized by Google

SLAVES.

A.—Emancipation in British Colonies (1834).

	Number.	Indemnity.	Per Head.
Jamaica	311,700	£6,152,000	£20
Barbadoes	83,000	1,721,000	21
Trinidad	22,300	1,039,000	50
Antigua, &c.	172,093	3,421,000	20
Guiana	84,900	4,297,000	53
Mauritius	68,600	2,113,000	31
Cape of Good Hope	38,400	1,247,000	33
Total	780,993	£20,000,000	£26

B.—Slavery in United States.

Year.	Number.	Ratio to Population, per Cent.	Year.	Number.	Ratio to Population, per Cent.
1790	697,900	18	1830	2,009,030	16
1800	893,040	17	1840	2,487,500	15
1810	1,191,400	16	1850	3,204,300	14
1820	1,538,100	16	1860	3,979,700	13

The war of emancipation cost 655,000 men killed, and an outlay of 555 millions sterling, or £140 per slave.

C.—Slavery in Brazil (1876).

Province.	Slaves.	Population.	Slave Ratio, per Cent.
Minas	370,400	2,039,000	18
Rio Janeiro	341,600	1,057,700	32
Bahia	167,800	1,380,000	12
San Paulo	156,600	837,400	19
Pernambuco	89,100	841,500	11
Maranham	74,900	359,100	21
Rio Grande Sul	67,800	434,800	16
Various	242,600	2,980,900	8
Total	1,510,800	9,930,400	15

There were 805,000 male and 706,000 female slaves held by 41,000 owners, averaging 37 to each owner. In 1882 the total number of slaves was 1,300,000, representing a market value of 104 millions sterling. It is expected there will be no slaves remaining in 1900.

D.—Slaves of Antiquity.

	Day's Wages.	Value.		Day's Wages.	Value.
Greek labourer	6d.	£56	Roman blacksmith	20d.	£145
,, tanner	10d.	103	,, shepherd	6d.	51
,, cutler	8d.	77	,, baker	19d.	140
,, boatman	6d.	60	,, cook	...	430
Roman gardener	8d.	65	,, actress	...	820
,, carpenter	20d.	148	,, physician	...	1100

Digitized by Google

Some of the wealthy Romans had as many as 10,000 slaves. The minimum price fixed by law was £16, but after great victories they could sometimes be bought for a few shillings on the field of battle.

SMALL-POX.

A.—Deaths per Million Inhabitants, per Annum.

England.		London		Scotland.		Ireland.	
Date.	Deaths.	Date.	Deaths.	Date.	Deaths.	Date.	Deaths.
...	...	1660–80	4,170	...	...	...	...
1760–1800	3,000	1760–90	2,260	...	...	...	...
1840–54	430	1840–60	408	...	...	1844	403
1871–73	178	1871–73	1,040	1864	305	1864–74	108
1881	100	1881	640	1874–82	28	1875–82	82

In the epidemic of 1861 the deaths in England were per million: army, 455; civilians, 928; London, 2420. In that of 1881, the returns showed deaths per million inhabitants, as follows:—

	Vaccinated.	Unvaccinated.	Difference.
London . . .	90	3,350	35 to 1
England . . .	98	4,380	44 to 1

In the epidemic at Leipsic in 1871, the death-rate was 12,700 per million inhabitants, 70 per cent. of whom were unvaccinated.

B.—Mortality among Persons Attacked.

	Vaccinated, per Cent.	Unvaccinated, per Cent.		Vaccinated, per Cent.	Unvaccinated, per Cent.
London .	15	45	Boston .	15	50
Montreal .	16	54	Philadelphia	17	64

During the Franco-German war the Germans lost only 263 men from this disease, the French 23,499, the former having been re-vaccinated in barracks. In the war in Paraguay, the Brazilians lost 43,000 men from malignant or black small-pox, that is, 35 per cent. of their army, nine cases in ten proving fatal.

C.—Small-Pox in London.

Period.	Deaths from Small-pox per Annum.	Ratio to all Deaths, per Cent.	Period.	Deaths from Small-pox per Annum.	Ratio to all Deaths, per Cent.
1629–70 .	702	5	1801–20 .	995	5½
1671–1700 .	1,353	5½	1821–30 .	692	3½
1701–30 .	1,834	7¼	1841–60 .	781	1½
1731–60 .	1,967	8	1861–70 .	816	1
1761–1800 .	2,022	9	1871–81 .	1,620	2

Digitized by Google

SNOW.—The most remarkable snowfalls in England have been in the following years:—

1141	1683	1784	1814
1606	1709	1799	1820
1674	1762	1812	1836

The earliest snow of the season was that of October 7, 1829, in the present century. There was no snow from November 1862 till February 1864.

SOAP.

A.—EXPORTATION (1881).

	Million Lbs.	Value.
Great Britain	39	£405,000
France	30	310,000
United States	14	160,000

The manufacture of soap in France averages 255 million lbs., and the consumption almost 6 lbs. per inhabitant, as against 10 lbs. in the United Kingdom.

B.—BRITISH SOAP.

Year.	Million Lbs.			Consump. per Inhab., Lbs.	Duty per Ton.	Price per Ton.
	Manufac.	Consump.	Export.			
1791	48	46	2	3·1	£21	£76
1801	57	54	3	3·6	21	74
1811	76	73	3	4·2	21	73
1821	98	94	4	4·6	28	68
1831	123	107	16	4·5	28	52
1841	199	170	29	6·4	14	48
1851	217	195	22	7·0	14	40
1861	254	232	22	8·0	...	27
1871	302	285	17	9·0	...	27
1881	389	350	39	10·0	...	22

The duty was removed in 1853, and the increased consumption of soap has probably tended to the reduction in death-rate.

SOCIETIES.

A.—LEARNED SOCIETIES OF LONDON (15 PRINCIPAL).

Year.	Members.	Year.	Members.
1830	2,201	1860	17,729
1840	8,376	1870	21,920
1850	15,769	1880	29,061

There are in the United Kingdom 118 societies, with 66,200 members and an income of £140,000 per annum.

Digitized by Google

B.—PRINCIPAL SOCIETIES: MEMBERS.

Royal 552	Geographical . 3,430	Agricultural . . 7,950
Statistical . . . 807	Botanical . . 1,660	Zoological . . 2,000
Archæological . 580	Pharmaceutical 3,250	British Assoc. . 2,400
Geological . . . 850	Law 1,530	Social Science . 1,550
Antiquaries . . 640	Arts 3,340	

SODA.—The annual production is (1882):—

	Tons.
Great Britain	432,000
France	127,000
Germany	101,000
Austria	40,000
Belgium, United States, &c. . .	11,000
Total	711,000

The production in Great Britain has quadrupled since 1850, when it was 104,000 tons.

SOIL.—The experiments of Schubler and Schleiden give the power of absorbing water in an area of 50 square inches, as follows, per 1000 grains of soil:—

	Grains Absorbed in			
	12 Hours.	24 Hours.	48 Hours.	72 Hours.
Gypsum	1	1	1	1
Limestone sand . .	2	3	3	3
Loam clay . . .	21	26	28	28
Muddy ,, . . .	25	30	34	35
Calcareous clay . .	26	31	35	35
Field ,, . . .	16	22	23	23
Slaty marl . . .	24	29	32	33
Garden mould . . .	35	45	50	52
Humus	80	97	110	120

SOOT.—London produces 50,000 tons per annum, worth £41,000, used for manure at 10 cwt. per acre.

SOUND.

Cannon at	Heard at	Distance, Miles.	Year.
Waterloo . .	Dover . .	180	1815
Cepeda . . .	Buenos Ayres .	160	1859

The Cepeda cannonade was heard at Luxan, in the province of Buenos Ayres. Mr. Glaisher, at 2 miles from the earth, heard a musket-shot and a dog bark, and at 4 miles a railway train.

SOUNDINGS. See *Sea.*

SPECIE. See *Bullion, Gold, Silver.*

Digitized by Google

SPINDLES.

	Thousands Omitted.					No. per 100 Inhab
	Cotton.	Wool.	Flax, &c.	Silk.	Total.	
United Kingdom	40,200	5,520	1,370	1,080	48,170	138
France . .	4,800	3,010	762	2,005	10,577	28
Germany .	5,390	2,830	318	950	8,488	19
Russia . .	3,360	610	145	360	4,475	6
Austria . .	2,220	480	343	420	3,463	9
Italy . .	930	210	50	400	1,590	6
Spain . .	860	260	...	100	1,220	8
Belgium . .	800	820	340	100	2,060	37
Holland . .	130	100	100	...	330	8
Scandinavia .	340	160	50	...	550	7
Switzerland .	1,620	200	10	430	2,260	80
Europe .	60,650	14,200	3,488	5,845	83,183	27
United States	11,140	3,300	80	550	15,070	30
India . .	1,470	...	830	150	2,450	1
Total . .	73,260	17,500	4,398	6,545	100,703	17

SPIRITS.

A.—Consumption per Annum.

	Gallons, Thousands.	Gallons per Inhab.		Gallons, Thousands.	Gallons per Inhab.
England .	21,600	0·84	Austria . .	29,300	0·80
Scotland .	8,800	2·35	Italy . . .	8·800	0·30
Ireland .	6,610	1·29	Spain . .	3,300	0·20
U. Kingdom	37,010	1·06	Belg. & Holl.	24,500	2·60
France . .	34,200	0·90	Denmark .	8,300	4·30
Germany .	59,600	1·33	Swed. & Nor.	27,000	4·20
Russia . .	178,000	2·20	U. States .	76,000	1·50

B.—Consumption in United Kingdom.

Year.	Gallons, Thousands.				Gallons per Inhabitant.			
	England.	Scotland.	Ireland.	U. King.	Eng.	Scot.	Ire.	U King.
1800	4,350	1,280	1,330	6,960	0·51	0·74	0·26	0·45
1810	4,790	1,750	4,730	11,260	0·48	0·97	0·80	0·62
1820	4,280	1,860	3,300	9,450	0·35	0·92	0·49	0·45
1830	7,730	6,010	9,005	22,745	0·55	2·60	1·15	0·95
1840	8,280	6,180	7,402	21,862	0·52	2·40	0·90	0·80
1850	9,330	7,120	7,410	23,860	0·52	2·43	1·12	0·88
1860	12,910	7,890	6,400	27,200	0·65	2·62	1·10	0·95
1870	14,630	8,580	8,300	31,510	0·67	2·56	1·55	1·01
1881	21,600	8,800	6,610	37,010	0·84	2·35	1·29	1·06

Digitized by Google

C.—MANUFACTURE OF SPIRITS IN ENGLAND.

Year.	Gallons, Thousands.	Duty, Pence.	Gallons per Inhab.	Year.	Gallons, Thousands.	Duty, Pence.	Gallons per Inhab.
1700 . .	1,210	4	0·22	1820 .	4,315	120	0·36
1720 . .	2,530	4	0·42	1830 .	7,680	90	0·55
1740 . .	6,715	4	1·10	1850 .	9,620	90	0·54
1760 . .	2,320	30	0·33	1860 .	12,910	90	0·65
1780 . .	2,330	30	0·35	1870 .	11,220	120	0·48
1800 . .	4,410	60	0·50	1881 .	16,930	120	0·65

D.—FLUCTUATIONS OF CONSUMPTION.

Gallons per Inhabitant.

	1830.	1840.	1850.	1860.	1870.	1881.
United Kingdom .	0·95	0·80	0·88	0·95	1·01	1·06
France . . .	0·26	0·33	0·39	0·51	0·60	0·90
Germany . . .	...	0·60	...	1·08	...	1·33
Russia . . .	5·00	...	3·70	4·80	...	2·20
Sweden . . .	8·80	8·00	8·40	6·00	4·60	4·25
Denmark . . .	...	7·20	...	5·80	...	4·30
Belgium . . .	0·96	...	1·26	...	1·90	2·40
United States . .	5·55	3·10	2·50	2·10	1·62	1·50

SPONGES.—On the coast of Syria 300 boats with 1500 divers pick up annually sponges worth £25,000; best, worth 40 shillings, inferior, 4 shillings per lb. Depth, 30 to 150 feet.

SQUARES.

Name.	City.	Acres.	Name.	City.	Acres.
Grosvenor . .	London . .	10	Bellecour . .	Lyons . .	32
Parade . . .	Vienna . .	15	St. Stephen's .	Dublin . .	40
Schloss . . .	Berlin . .	16			

SQUIRRELS.—There are 25 millions killed annually in Russia for their skins.

STAMPS. See *Finances*, Table G.

STARVATION.

	Deaths from Hunger in England.	
	1879.	1880.
Males . . .	188	184
Females . .	124	102
Total . .	312	286

The coroners' inquests for London show 80 deaths yearly from hunger, without counting persons who commit suicide in extreme want.

Digitized by Google

STATIONERY OFFICE (UNITED KINGDOM).—The cost is £570,000 per annum; viz., "blue-books," £64,000; clerks, £108,000; Gazette, &c., £398,000 per annum.

STATURE. See *Anthropometry.*

STEAM.

A.—The World's Horse-Power.

Year.	Thousands Omitted.				Percentage.		
	Fixed.	Railway.	Ships.	Total.	Fixed.	Railway.	Ships.
1840	1,290	960	106	2,356	55	41	4
1850	1,780	4,190	340	6,310	28	66	6
1860	2,450	7,900	1,050	11,400	22	69	9
1870	3,650	13,700	2,190	19,540	19	70	11
1880	7,415	17,618	3,891	28,924	25	61	14

B.—Owners of Aggregate Power.

Year.	Horse-Power, Thousands Omitted.				Ratio to Total.	
	G. Britain.	Continent.	U. States.	Total.	British.	American.
1840 . .	850	352	1,154	2,356	36	49
1850 . .	2,320	1,990	2,000	6,310	37	32
1860 . .	3,100	4,220	4,080	11,400	27	36
1870 . .	4,780	8,980	5,780	19,540	46	30
1880 . .	7,780	12,992	8,152	28,924	45	28

C.—Number of Engines (1880).

	Stationary.	Railway.	Ships.	Total.	Ratio.
United Kingdom	110,000	13,480	5,247	128,727	33·7
France . .	37,805	7,031	387	45,223	11·8
Germany . .	55,054	9,850	266	65,170	17·1
Russia . .	8,946	3,560	227	12,733	3·3
Austria . .	9,160	3,580	81	12,821	3·3
Italy . . .	4,459	1,540	119	6,118	1·6
Spain . . .	2,300	1,320	324	3,944	1·0
Portugal . .	140	220	23	383	0·1
Switzerland .	1,500	1,000	20	2,520	0·7
Belgium . .	11,942	1,080	34	13,056	3·4
Holland . .	5,738	540	94	6,372	1·7
Scandinavia .	3,000	1,100	575	4,675	1·2
Europe . .	250,044	44,301	7,397	301,742	78·9
United States .	60,300	17,815	1,779	79,894	21·1
The World .	310,344	62,116	9,176	381,636	100·0

Digitized by Google

D.—Horse-Power of Nations (1880).

	Thousands Omitted.				Ratio.	Horse-power per 1000 Inhab.
	Fixed.	Railway.	Ships.	Total.		
Great Britain .	2,200	3,400	2,180	7,780	26·9	220
France . .	906	2,387	220	3,513	12·1	97
Germany . .	1,321	2,860	144	4,325	14·9	96
Russia . .	237	1,070	58	1,365	4·8	17
Austria . .	157	1,075	48	1,280	4·4	30
Italy . . .	54	377	49	480	1·7	18
Spain . . .	48	330	105	483	1·7	30
Portugal . .	3	55	8	66	0·2	16
Switzerland .	48	228	5	281	0·9	101
Belgium . .	382	181	32	595	2·1	110
Holland . .	60	90	66	216	0·7	54
Scandinavia .	40	220	156	416	1·4	48
Europe . .	5,456	12,273	3,071	20,800	71·8	67
United States .	1,987	5,345	820	8,152	28·2	158
The World .	7,443	17,618	3,891	28,952	100·0	80

E.—Steam Locomotion.

Year.	Railways, Miles.		British Ratio, per Cent.	Steamers, Tons.		British Ratio, per Cent.
	The World.	British Empire.		All Flags.	British.	
1830 . .	878	220	25	28,400	21,600	75
1840 . .	5,231	838	16	116,000	95,000	82
1850 . .	24,490	6,853	28	392,000	188,000	48
1860 . .	67,069	13,639	20	820,000	502,000	61
1870 . .	130,170	24,172	18	1,918,000	1,203,000	62
1880 . .	230,238	39,221	17	5,644,000	3,108,000	55

F.—Remarkable Steamships.

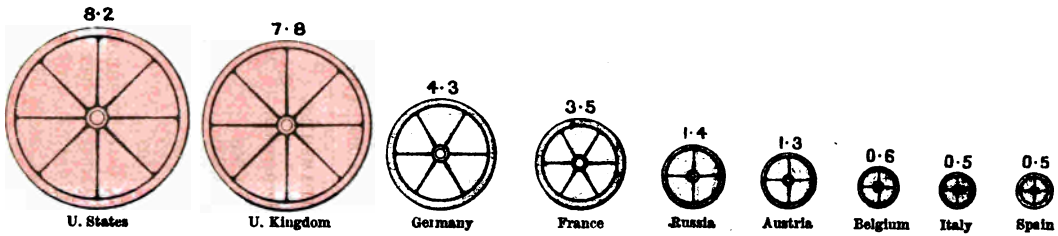
Name.	Tons, Gross.	Horse-power.	Speed, English Miles per 24 Hours.
Servia . .	7,800	1,000	440
Alaska . .	6,932	1,800	467
Parisian . .	5,359	800	384
Arizona . .	5,147	1,200	438
Germanic . .	5,009	760	410
Britannic . .	5,004	760	410

The "Times" of July 18th, 1883, had an announcement that Messrs. John Elder & Co., of Glasgow, were building two steamers for the Cunard line, Liverpool to New York, with these dimensions: length 500 feet, beam 57 feet, depth 40 feet, each being 8000 tons and 1300 horse-power. See *Passages.*

Digitized by Google

STEAM-POWER.

Millions horse-power.



The above includes stationary and locomotive engines.

Horse-power per 1000 inhabitants.

Digitized by Google

Digitized by Google

STEEL.

A.—Tons Made.

	Thousands Omitted.			Ratio in
	1850.	1870.	1881.	1881.
Great Britain	49	245	1,780	35·0
United States		64	1,374	27·0
Germany		170	865	17·1
France		94	418	8·3
Austria	22	22	176	3·4
Russia		9	296	5·8
Belgium		10	135	2·7
Sweden		6	37	0·7
Total	71	620	5,081	100·0

B.—Works and Converters in 1881.

	Works.	Converters.	Capacity, Tons.
Great Britain	23	116	2,500
United States	20	36	2,200
Germany	23	81	1,300
France	10	23	500
Russia	5	24	350
Belgium	4	18	380
Sweden	10	35	100
Total	95	333	7,330

C.—Exports of Steel, Tons.

Year.	Exported from		Value per Ton.
	G. Britain.	Germany.	
1860	15,000	1,270	£35
1865	31,000	2,400	33
1870	46,000	36,000	32
1875	155,000	122,000	36
1881	894,000	351,000	11

D.—Tensile Test of Steel.

Bar 8 inches long.

Sq. Inch Section.	Strain, Tons per Sq. Inch.	Extension, Inches.	Sq. Inch Section.	Strain, Tons per Sq. Inch.	Extension, Inches.
1·0000	13·93	·01	·8325	28·35	1·40
·9799	16·96	·10	·7088	27·32	2·00
·9331	23·43	·40	·5541	25·05	2·20
·8741	27·23	1·00			

Elastic limit	17·40 tons.	Cohesion	45·21 tons.
Maximum strain	28·35 ,,	Extension	27½ per cent.
Breaking load	25·05 ,,	Contraction	44½ ,,

Taking the strength of Swedish iron at 100, the tensile strength of steel compares thus :—

Swedish iron	100	Cannon steel	173
Boiler steel	118	Spring steel	202

Digitized by Google

A bar of chrome steel, half-inch squared and 5 inches long, gives a strength of 141,000 lbs. per square inch, being 37 per cent. more than carbon steel.

The nominal strength of steel is 30 tons per square inch, but Professor Siemens shows that it is really 36 tons.

E.—Transverse Strain.

A steel bar, 1·02 inches square and 4½ feet long, gives the following results:—

Weight. Lbs.	Deflection, Inches.	Weight, Lbs.	Deflection, Inches.
50	·065	500	·611
100	·118	1,000	1·266
200	·240	1,400	2·746

F.—French Admiralty Tests.

Minimum Breaking Load.

Iron Plates.	Lbs.	Steel Plates, Inch.	Lbs.
Common	52	0·16 to 0·24	101
Better	62	0·24 „ 0·80	99
Best	64	0·80 „ 1·20	97

The plates supplied by Messrs. Cammell of Sheffield, for 7 French ironclads, were subjected to 36,000 foot-tons of energy, viz.:—

Shot, 760 lbs.; charge, 150 lbs., fired from a 12-inch gun, with velocity 1425 feet per second; range, 264 feet.

The plates in question were 11 feet long and 7 feet wide, by 18 inches thick.

G.—Steel Shipbuilding.

On the Clyde.

	Tons.		Tons.
1879	18,000	1881	67,000
1880	42,000	1882	108,000

At the end of 1882 there were 143,000 tons of steel vessels on the stocks, the largest being the Oregon, 7400 tons. A steel ship can carry 20 per cent. more than one made of iron.

H.—Steel for Railways.

	Consumption, Tons per Annum.		
	New Lines.	Renewal.	Total.
United States	1,200,000	900,000	2,100,000
Great Britain	60,000	160,000	220,000
Continent, &c.	680,000	655,000	1,335,000
Total	1,940,000	1,715,000	3,655,000

Digitized by Google

Three-fourths of the steel annually produced is for railways, the lines working in December 1882 being estimated as follows:—

	Miles.	Tons Rails.
Steel	110,000	14,400,000
Iron	140,000	20,000,000
Total	250,000	34,400,000

	Miles.	Tons Rails.	Tons per Mile.
United States	105,000	12,000,000	115
Great Britain	18,000	3,300,000	180
Other countries	127,000	19,100,000	150
Total	250,000	34,400,000	137

The life of an iron rail is 16, that of a steel one 40 years. Steel sleepers cost £100 a mile less than creosoted timber.

STILL-BIRTHS.

A.—In Order of Months, Ratio.

January	106	May	98	September	89
February	106	June	98	October	100
March	103	July	94	November	101
April	100	August	98	December	107

B.—Per 1000 Births.

France	46	Italy	31	Sweden	29
Germany	41	Holland	43	Norway	35
Austria	25	Belgium	45	Switzerland	44

The ratio in France from 1830 to 1845 was only 30 per 1000.

STORMS.—The most destructive in the United Kingdom have been:—

1703, November 27th.—Damage in London, £2,000,000. On the coast 12 war-ships sunk, and 1800 men lost.

1775, October 29th.—Almost equal to the above. Houses blown down and ships sunk.

1839, January 6th.—Many houses blown down at Liverpool and Dublin, and 200 persons killed at Liverpool.

1859, October 25th.—Great loss of shipping, including the "Royal Charter," near Holyhead.

1879, December 28th.—Tay Bridge blown down; loss of 90 lives. See *Wind-pressure.*

Digitized by Google

STRAW.

Production, Millions of Tons.

United Kingdom	10	Austria	14	Holland[1]	1
France	17	Italy	7	Denmark	2
Germany	16	Spain	7	Sweden	2
Russia	42	Belgium	2	United States	20

STREET ACCIDENTS. See *Cabs.*

STRENGTH.

A.—Comparative Scale.

Ordinary man	100	Farnese Hercules	362
Byron's Gladiator	173	Horse	750

B.—Tensile and Transverse.

A crushing force of 1000 per square inch on a bar 1 inch square and 12 inches long gives the following ratios of strength :—

	Tensile.	Transverse.		Tensile.	Transverse.
Stone	100	10	Cast iron	158	20
Glass	123	10	Timber	1,900	85

See *Steel* and *Metals.*

SUGAR.

A.—Production, Thousands of Tons.

*Germany	606	*Russia	240	French colonies	105
Cuba	520	Java	190	United States	90
*Austria	460	Manilla	180	Egypt, &c.	285
*France	390	Brazil	150	All beet	1,811
British colonies	340	*Holland, &c.	115	All cane	1,860

Beet sugar has increased 9-fold since 1853, and now gives 7 per cent. of saccharine instead of 4 per cent.; that is, 14 tons of roots give a ton of sugar.

B.—Consumption: All Nations.

	Tons, Thousands.	Lbs. per Inhab.		Tons, Thousands.	Lbs. per Inhab.
United Kingdom	1,050	68	Spain and Port.	45	5
France	360	21	Belg. and Holl.	70	16
Germany	430	21	Scandinavia	90	22
Russia	240	7	United States	990	43
Austria	240	14	Colonies	65	...
Italy	90	7	Total	3,670	...

* Beet sugar: the rest cane.

Digitized by Google

As a general rule the consumption of sugar per inhabitant is regarded as an indication of the public wealth. The increased consumption in Great Britain has kept pace with the growth of *wealth* and *income* (q.v.)

C.—Consumption in Great Britain.

Year.	Tons.	Lbs. per Inhab.	Duty per Ton.	Price per Ton.
1705 . .	12,000	3	£3	£70
1730 . .	41,000	9	4	70
1750 . .	53,000	11	5	70
1780 . .	77,000	14	7	70
1801 . .	165,000	22	20	85
1811 . .	184,000	23	27	90
1820 . .	143,000	15	27	63
1830 . .	214,000	20	24	49
1840 . .	188,000	15	24	48
1850 . .	310,000	25	10	40
1860 . .	420,000	32	13	35
1870 . .	690,000	49	5	32
1881 . .	1,050,000	68	...	24

About 70,000 tons are annually consumed by brewers.

SUICIDE.

A.—Average Numbers Yearly.

			Per Million Inhab.	
	1851–60.	1871–77.	1851–60.	1871–77.
England . . .	1,167	1,614	65	67
Scotland . . .	...	140	...	40
Ireland . . .	...	90	...	17
United Kingdom .	...	1,844	...	56
France . . .	3,821	5,440	105	156
Germany . . .	3,820	5,878	129	143
Russia . . .	...	1,960	...	25
Austria . . .	1,305	3,292	45	96
Switzerland . .	...	544	...	202
Italy	728	995	31	37
Belgium . . .	189	388	46	71
Denmark . . .	424	490	274	280
Sweden and Norway .	381	485	76	81
Australia . . .	...	233	...	105

Among the circumstances keeping pace more or less with the increase of suicide (some or all of which may be part causes) are notable, the increase of railways and commerce, the greater consumption of spirits and flesh meat, the spread of secular education and infidelity, the rapid growth of urban and decline of rural life, the higher ratio of insanity, the increase of wealth, the new system of divorce, and the keener struggle for existence in Europe, owing to the greater density of population.

Digitized by Google

B.—Suicide in Cities.

Average, 1871–80, per Annum per Million Inhabitants.

Naples	34	Turin	150	Brussels	271
Rome	74	Berlin	170	Vienna	287
London	87	Florence	180	Copenhagen	302
Genoa	135	Petersburg	206	Stockholm	354
New York	144	Dresden	240	Paris	422

The ratio is declining steadily in London, and also in some other cities.

C.—Decline in London.

Years.	Annual Average.	Per Million Inhab.	Years.	Annual Average.	Per Million Inhab.
1841–50	231	107	1861–70	268	88
1851–60	257	100	1871–80	305	85

D.—Increase in France.

France.		Paris.	
Years.	Per Million Inhab.	Years.	Per Million Inhab.
1830	51	1820–30	488
1850	103	1831–40	549
1860	112	1841–50	573
1870	133	1851–70	412
1880	178	1871–80	422

In 5 years ending 1880, no fewer than 238 children, under 15 years, committed suicide in France.

E.—Suicide according to Sex.

	Percentage.			Percentage.	
	Male.	Female.		Male.	Female.
England	73	27	Austria	81	19
Scotland	75	25	Italy	80	20
Ireland	77	23	Switzerland	88	12
United Kingdom	74	26	Spain	71	29
France	79	21	Belgium	81	19
Germany	82	18	Holland	84	16
Denmark	77	23	Sweden	76	24
Russia	79	21	United States	72	28

F.—According to Religion.

Per Million Persons.

	Protestant.	Catholic.	General Ratio.
United Kingdom	63	17	56
Prussia	170	52	131
Bavaria	195	69	102
Austro-Hungary	140	90	96
Switzerland	262	81	202

Legoyt says the Jews have even a lower ratio of suicide than Catholics.

Digitized by Google

G.—According to Condition.

	Ratio.		
	Married.	Unmarried.	Total.
France	46	54	100
Germany	43	57	100
Belgium	45	55	100
Italy	44	56	100
Switzerland	43	57	100

H.—According to Seasons.

	Spring.	Summer.	Autumn.	Winter.	Year.
United Kingdom	336	372	264	228	1,200
France	335	357	262	246	1,200
Saxony	336	368	262	234	1,200
Bavaria	340	370	261	229	1,200
Austria	336	376	263	225	1,200
Spain	312	455	236	197	1,200
Belgium	331	356	278	235	1,200
Denmark	341	374	272	213	1,200
General average	333	380	262	225	1,200

Guerry classifies the ratio for days of the week in France as follows:—

Sunday	96	Thursday	110
Monday	106	Friday	96
Tuesday	110	Saturday	78
Wednesday	104	Average	100

I.—Modes of Suicide: Percentage.

	England.			
	Male, per Cent.	Female, per Cent.	General, per Cent.	France, per Cent.
Hanging	35	23	32	44
Drowning	16	35	21	29
Poison	9	21	13	27
Various	40	21	34	
	100	100	100	100

K.—Causes of Suicide.

	European Average, per Cent.
Insanity	34
Grief	23
Drink	15
Various	28
	100

Caspar estimates 25 per cent. caused by drink in Germany, Brown 12 per cent. in England.

Digitized by Google

L.—Suicide in Armies.

Per 100,000 *men, per annum.*

	Army.	Civilians (Age, 20–60).	Excess in Army.
British	38	11	245 per cent.
French	51	20	154 ,,
German	64	25	156 ,,
Belgian	45	10	350 ,,
Austrian	85	15	467 ,,
Italian	30	8	275 ,,
Swedish	45	12	275 ,,

M.—Suicide in British Army.

Per 100,000 *men, per annum.*

Infantry	31	In England	34
Artillery	34	In Colonies	34
Cavalry	50	In India	47

Age.	U. Kingdom.	Colonies.	India.	Age.	U. Kingdom.	Colonies.	India.
20–25	20	21	13	30–35	51	45	84
25–30	39	33	39	35–40	71	81	103

SULPHUR.

Year.	Export from Sicily, Tons.	Import into Great Britain, Tons.	Value per Ton.
1820	18,500	4,600	£10
1830	38,100	12,100	8
1840	77,800	34,400	5
1850	85,000	33,500	8
1860	140,000	50,200	9
1870	173,000	53,300	6
1880	287,000	46,400	5

The Sicilian sulphur deposits employ 18,000 miners. See *Gunpowder.*

SUNSTROKE.—Deaths in England from this cause average 213 per million, or 1 in 4700 deaths.

Annual Average.

Year.	Males.	Females.	Total.	Per Million Deaths.
1863–70	57	9	66	137
1871–78	88	23	111	213

SWAMPS.—France has 800,000 acres of swamp, which cause much fever in the vicinity.

SWIMMING.—Captain Webb swam from Calais to Dover in 1877, but was afterwards beaten by William Beckwith in

Digitized by Google

a swimming match for 90 miles in 60 hours. Lord Byron swam across the Dardanelles.

Swimmer.	Distance.	Miles.	Time.
Miss Beckwith . .	London to Greenwich . .	...	...
Miss Parker . . .	London to Blackwall . .	7	95 min.
Miss Dicks . . .	Shoreham to Brighton . .	6	...
Miss Saigeman . .	,, ,, . .	,,	...
Fr. Cavil . . .	Putney to Blackwall . .	16	4 hrs.
,, . . .	Calais to Dover . . .	23	13 ,,

Miss Beckwith was only 14 years of age when she swam from London to Greenwich (1875).

T

TAILORS.

A.—Number in United Kingdom (1871).

	Male.	Female.	Total.	Per 10,000 Inhab.
England . .	111,800	38,000	149,800	67
Scotland . .	18,300	1,100	19,400	59
Ireland . .	18,800	1,500	20,300	38
U. Kingdom .	148,900	40,600	189,500	60

B.—Tailors' Wages (1880).

Shillings per Week.

Great Britain .	25	Germany . .	15	Italy . . .	18
France . . .	21	Belgium . .	17	New York . .	58

C.—Army-Clothing in England.

Ordinary Wages, in Pence.

Tunic . . .	38	Frock . .	22	Towels, doz. . .	4
Trousers . .	14	Cap . . .	2½	Belt . . .	1

A good workwoman earns about 4 shillings a-day.

TALLOW.

A.—Consumption in United Kingdom.

	Tons.			Price, Ton.	Value Consumed.	
	British.	Imported.	Total.		Thousands omitted.	Per Inhab. pence.
1830	33,200	56,600	89,800	£46	£4,140	40
1840	35,000	56,300	91,300	43	3,910	35
1850	37,300	62,200	99,500	39	3,880	34
1860	43,500	71,800	115,300	56	6,440	53
1870	47,100	77,200	124,300	43	5,330	40
1881	49,400	59,100	108,500	35	3,800	27

Digitized by Google

B.—Exports of Tallow, Tons.

	From			
	Russia.	U. States.	River Plate.	Australia.
1830	66,400	2,200	8,600	...
1860	40,300	14,100	45,300	6,200
1870	21,100	35,200	62,400	25,300
1880	10,400	44,300	23,300	32,100

C.—Production and Consumption of Tallow in 1882.

	Tons.				
	Production.	Consumption.	Surplus.	Deficit.	Consumption lbs. per Inhab.
United Kingdom	49,400	108,500	...	59,100	6½
France . .	40,200	93,400	...	53,200	5½
Germany . .	56,400	107,300	...	50,900	5
Russia . .	116,000	105,500	10,500	...	2½
Austria . .	42,000	42,000	...	...	3
Italy . . .	11,200	11,200	...	...	1
Spain and Portugal	11,500	11,500	...	...	1¼
Holland . .	7,000	51,400	...	44,400	28
Belgium . .	6,000	15,200	...	9,200	6
Scandinavia .	16,000	18,000	...	2,000	4½
Europe . .	355,700	564,000	...	208,300	3½
United States .	330,000	106,000	224,000	...	4½
Other Countries	60,000	75,700	...	15,700	...
	745,700	745,700	...	...	

In Russia, Holland, and United States, lard is included.

TARIFF.

A.—Import Duties, General Average.

	Ratio to Imports. per Cent.	Shillings. per Inhab.		Ratio to Imports. per Cent.	Shillings per Inhab
United Kingdom	5½	12	Belgium . .	1½	4
France . . .	6½	8	Denmark . .	9	10
Germany . . .	6	4	Sweden & Nor.	12	8
Russia . . .	18	3	Europe . . .	7½	4½
Austria . . .	5	2	United States .	28	16
Italy	11	4	Canada . . .	15	13
Spain	24	6	Australia . .	13	42
Portugal . . .	26	10	Brazil . . .	44	15
Holland . . .	1	2	Argentine Repub.	37	31

Digitized by Google

B.—Duties on English Cotton Goods.

	Per Cent.		Per Cent.
China, Guiana	5	Belgium, Greece	15
India, Queensland	5	Holland, New Zealand	15
Turkey	7	Austria	18
Cape, Feejee,	10	Canada	20
Tasmania, S. Australia	10	Victoria, Chili	25
Uruguay, W. Indies	12	Brazil	30
Newfoundland	13	Argentine Republic	40

C.—British Tariffs since 1580.

Ratio of Duties to Total Imports.

Year.	Per Cent.	Year.	Per Cent.	Year.	Per Cent.
1580	1	1720	21	1844	40
1614	8½	1800	20	1866	10
1684	13½	1827	46	1881	5½

D.—Principal Items of British Tariff.

Duties Expressed in Shillings.

	1881.	1834.	1819.	1787.
Bacon cwt.	...	28	56	47
Books ,,	...	100	100	20
Butter ,,	...	20	20	2½
Cheese ,,	...	10	10	1½
Cocoa ,,	9	19	280	240
Coffee ,,	14	140	280	224
Cotton ,,	...	3	9	9
Eggs ,,	...	6	6	3
Paper ,,	...	28	94	?
Potatoes ,,	...	2	2	4
Rice ,,	...	15	15	7
Soap ,,	...	90	90	44
Spirits, gallon	10	22	22	6
Sugar cwt.	...	63	63	27
Tallow ,,	...	1	3	...
Tea ,,	56	240	224	45
Tobacco ,,	392	784	448	392
Wine, gallon	1	5½	14	5
Wool, cwt.	...	9	56	0

Blanks in the above table signify duty-free. Grain was subject to import-dues on a sliding scale, according to market prices in Great Britain, down to 1846.

Digitized by Google

TAXES.

A.—National and Local Revenues.

	Thousands Omitted.			Per Inhabitant, Shillings.	Income, Millions £.	Ratio of Taxes, per Cent.
	National.	Local.	Total.			
U. Kingdom .	£85,682	£38,091	£123,773	71	1,247	10
France . . .	112,205	32,440	144,645	77	965	15
Germany . .	90,320	13,270	103,590	46	850	12
Russia . . .	73,700	11,200	84,900	20	760	11
Austria . . .	68,400	5,300	73,700	40	602	12
Italy	54,200	20,100	74,300	52	292	25
Spain . . .	31,600	9,100	40,700	49	188	21
Portugal . .	6,900	1,300	8,200	39	45	18
Holland . .	8,400	2,100	10,500	52	104	10
Belgium . .	11,400	2,250	13,650	50	120	11
Denmark . .	2,700	1,330	4,030	41	47	9
Swed. and Nor.	7,020	3,460	10,480	32	104	10
Europe . .	£552,527	£139,941	£692,468	44	5,324	13
United States	75,600	84,200	159,800	61	1,420	11
Total . .	£628,127	£224,141	£852,268	46	6,744	12½

(For British Colonies, Brazil, &c., see *Finances.*)

The national taxes for Germany include the budgets of Prussia, Bavaria, &c.

B.—Increase of Taxation in Great Britain and France.

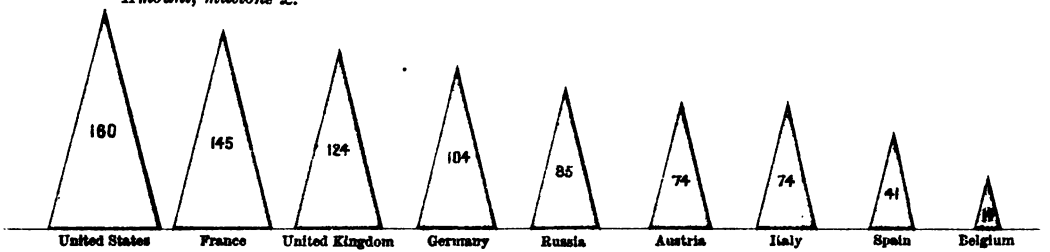
Year.	Thousands Omitted.					
	United Kingdom.			France.		
	National.	Local.	Total.	National.	Local.	Total.
1830 . .	£55,500	£10,820	£66,320	£39,600	£7,100	£46,700
1840 . .	59,360	10,240	69,600	46,400	8,800	55,200
1850 . .	55,800	11,050	66,850	55,200	11,700	66,900
1860 . .	71,100	14,950	86,050	68,500	18,100	86,600
1870 . .	75,400	24,300	99,700	72,900	21,300	94,200*
1882 . .	85,700	38,100	123,800	112,300	32,400	144,700
	Shillings per Inhabitant.					
1830 . .	46	9	55	25	4	29
1840 . .	45	8	53	27	5	32
1850 . .	40	8	48	32	7	39
1860 . .	50	10	60	36	10	46
1870 . .	48	16	64	40	12	52
1882 . .	49	22	71	60	17	77

* The figures are those of 1869, the year before the war.

Digitized by Google

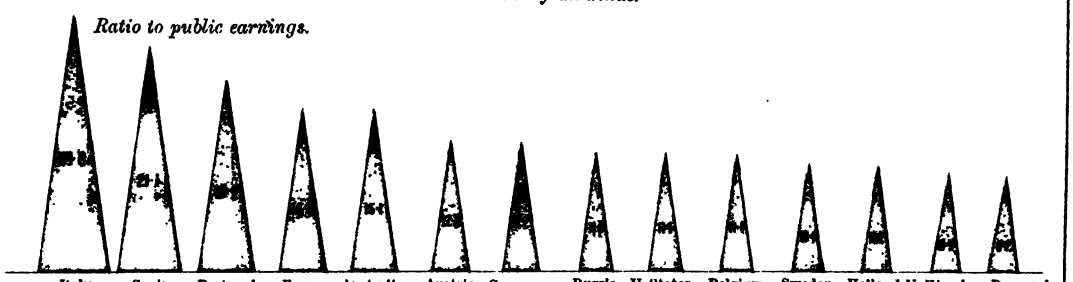
TAXATION.

Amount, millions £.



The above includes national and local taxes and revenues of all kinds.

Ratio to public earnings.



Digitized by Google

Digitized by Google

C.—Taxation compared with Earnings.

Year.	Millions £.				Per-centage of Taxes.	
	Taxation		Earnings.			
	United Kingdom.	France.	United Kingdom.	France.	United Kingdom.	France.
1840 . .	70	55	540	480	13·0	11·5
1869 . .	100	94	960	806	10·4	11·9
1882 . .	124	145	1,247	965	10·0	15·0

D.—Taxes and Revenues of United Kingdom.

Thousands Omitted.

	1820.	1840.	1860.	1870.	1880.
Customs .	£12,062	£23,658	£24,461	£21,529	£19,326
Excise . .	30,140	15,629	20,361	21,763	25,300
Stamps .	7,080	7,512	8,044	9,248	11,300
Taxes . .	8,870	4,157	12,828	14,544	11,900
Post-Office .	1,140	1,323	3,310	4,770	7,770
Sundries .	2,342	7,016	2,086	3,580	5,669
National .	£61,634	£59,365	£71,090	£75,434	£81,265
Local . .	9,450	10,240	14,950	24,300	38,100
Total .	£71,084	£69,605	£86,040	£99,734	£119,365

E.—Incidence of Taxation (1880).

	Revenue, Thousands Omitted.			Assessed Incomes, Millions £.	Incidence of Taxation.
	Imperial.	Local.	Total.		
England . .	£61,316	£31,060	£92,376	486	18·8
Scotland . .	9,990	3,663	13,653	56	24·4
Ireland . .	8,575	3,368	11,943	36	33·2
U. Kingdom	£79,881	£38,091	£117,972.	578	20·3

The real incidence of all taxation is better shown by comparison with the people's earnings, viz. :—

	Millions £.		Incidence of Taxation.
	Taxation.	Earnings.	
England . . .	92	1,048	8·8
Scotland . . .	14	121	11·7
Ireland	12	78	15·4
United Kingdom .	118	1,247	9·6

The above does not include "sundries," which belong to Imperial revenue.

Digitized by Google

F.—Imperial Taxation according to Class.

United Kingdom (Thousands Omitted).

	Rich.	Middle.	Working.	Total.
Excise . . .	£1,620	£9,310	£16,244	£27,174
Customs . .	1,201	6,808	11,287	19,296
Stamps . . .	6,490	5,136	730	12,356
Taxes . . .	7,010	5,025	720	12,755
Post-office . .	860	6,380	1,060	8,300
Total . . .	£17,181	£32,659	£30,041	£79,881
Ratio . .	21·5	40·9	37·6	100·0

Incidence on the Rich.

	Numbers.	Taxes, Thousands.	Income, Million £.	Ratio Taxes. Per Head.	On Income.
England . .	966,000	£14,190	286	£14 14 0	4·96
Scotland . .	121,000	1,816	30	15 0 2	6·05
Ireland . .	72,000	1,175	14	16 6 6	8·40
U. Kingdom	1,159,000	£17,181	330	£14 16 2	5·16

Incidence on Middle-class.

	Numbers.	Taxes, Thousands.	Income, Million £.	Ratio Taxes. Per Head.	On Income.
England .	7,654,000	£25,324	381	£3 6 2	6·70
Scotland .	967,000	3,930	49	4 1 4	8·02
Ireland . .	860,000	3,405	34	3 19 2	10·02
U. Kingdom	9,481,000	£32,659	464	£3 8 10	7·03

Incidence on Working-class.

	Numbers.	Taxes, Thousands.	Income, Million £.	Ratio Taxes. Per Head.	On Income.
England .	17,490,000	£21,802	374	£1 4 10	5·81
Scotland .	2,646,000	4,244	46	1 12 1	9·23
Ireland . .	4,228,000	3,995	36	0 18 9	11·10
U. Kingdom	24,364,000	£30,041	456	£1 4 7	6·63

The numbers of each class are determined according to the results of Legacy-returns for 1877 in the three kingdoms. The lightness of taxation on the working-class in England is very remarkable.

G.—Local Taxes of England and Wales.

Year.	Amount, Thousands Omitted.	Shillings per Inhab.	Year.	Amount, Thousands Omitted.	Shillings per Inhab.
1688 . .	£780	3	1813 . .	£8,647	16
1701 . .	1,083	4	1830 . .	9,540	14
1730 . .	1,380	5	1840 . .	8,020	10
1770 . .	1,690	5	1850 . .	8,910	10
1780 . .	2,070	5	1862 . .	12,210	12
1790 . .	2,420	6	1868 . .	16,100	15
1803 . .	5,348	11	1880 . .	31,060	24

Digitized by Google

H.—England and Wales since 1817.

Thousands Omitted.

Rates, &c.	1817-40.	1840-61.	1868.	1878.	1881.
Highway . .	£1,230	£1,410	£1,380	£1,797	£1,821
Poor . . .	6,050	5,350	7,498	7,943	7,970
Sanitary, &c.	1,220	3,000	7,220	21,159	22,643
Total . . .	£8,500	£9,760	£16,098	£30,899	£32,434

I.—Poor-rates in England and Wales.

Period.	Annual Average.	Rental Valuation.	Poor-rate per £.	Poor-rate per Inhab.
1702-14 . .	£910,000	£14,200,000	16d.	41d.
1760-75 . .	1,520,000	24,900,000	15d.	58d.
1783-93 . .	2,050,000	30,300,000	16d.	66d.
1803 . . .	4,080,000	35,100,000	27d.	107d.
1815 . . .	6,100,000	53,800,000	27d.	133d.
1816-20 . .	7,310,000	58,200,000	30d.	152d.
1830-35 . .	6,742,000	75,900,000	22d.	116d.
1842-50 . .	5,290,000	90,400,000	14d.	74d.
1851-60 . .	5.510,000	109,600,000	12d.	69d.
1861-70 . .	6.740,000	134,300,000	12d.	77d.
1871-80 . .	7,710,000	167,200,000	11d.	75d.
1880 . . .	8,015,000	191,150,000	10d.	74d.

The above shows only the rates expended on the poor, but the Poor-rate often rose 50 per cent. higher, as it included police and other items. The valuation includes many items of real estate not liable to Poor-rate, and is therefore much higher than the nominal Poor-law assessment, since it is made up thus in millions £: Houses, 96½; lands, 51¾; railways, 24½; mines, 10¼; gasworks, &c., 8¼.

K.—Poor-Rates in Scotland.

Year.	Amount.	Per Pauper.	Valuation Rental.	Poor-Rate per £.	Poor-Rate per Inhab.
1847 . .	£434,000	...	£10,120,000	10¼d.	37d.
1857 . .	599,000	£5 5 0	12,030,000	11⅜d.	48d.
1867 . .	757,000	6 2 0	16,320,000	11d.	56d.
1877 . .	806,000	8 1 0	21,240,000	9d.	54d.
1880 . .	849,000	8 5 0	22,330,000	9d.	56d.

The above is the poor-law valuation.

L.—Local Taxes in Scotland (1881).

	Revenue.		Expenditure.
Rates . . .	£2,882,000	Burgh boards .	£2,406,000
Tolls . . .	1,349,000	Parochial boards .	1,022,000
Loans . . .	1,444,000	School, &c. . .	2,247,000
Total . .	£5,675,000	Total . .	£5,675,000

Rates average 21 shillings, against 26 shillings in England, per inhabitant, and 31 pence in the £ against 51 pence in England. Local debt in 1882 (see Appendix) was 19 millions, or £5 per inhabitant.

Digitized by Google

M.—Block's Ratio of Taxes.

	Percentage.	
	Direct.	Indirect.
Great Britain	15	85
France	25	75
Germany	34	66
Russia	20	80
Austria	46	54
Hungary	78	22
Italy	51	49
Greece	48	52
Spain	44	56
Switzerland	34	66
Holland	33	67
Belgium	31	69
Portugal	30	70
Denmark	28	72
Sweden	24	76
Norway	...	100

N.—Russian Poll-Tax (1882).

Class.	Thousands Omitted.		Pence per Head.
	Number.	Tax.	
Serfs	21,502	£5,203	57
Proprietors	693	140	48
Cossacks	563	170	72
Baschkirs	484	100	50
Bessarabians	300	80	65
Total	23,542	£5,693	58

O.—Local Taxes in France.

Year.	Thousands Omitted.			
	Paris.	30 Cities.	Communes.	Total.
1806	£736	£491	£801	£2,028
1837	2,760	1,490	4,034	8,290
1864	5,370	2,461	12,300	20,131
1882	9,805	4,230	18,405	32,440

TEA.

A.—Production.

	Million Lbs.	Value.
China	290	£11,600,000
Japan	35	1,500,000
India	52	2,800,000
Java	7	300,000
Paraguay	10	100,000
Total	394	£16,300,000

B.—Consumption.

	Million Lbs.	Oz. per Inhab.
Great Britain	167	73
United States	72	21
Australia	14	81
Russia	37	7
Various	114	...
Total	394	...

See *Food*, Table B.

Digitized by Google

C.—Consumption in United Kingdom.

Year.	Lbs., Thousands Omitted.	Oz. per Inhab.	Duty per Lb., Pence.	Price per Lb., Pence.
1711	142	½	66	216
1725	370	1	66	200
1740	1,003	3	66	200
1750	2,568	6	40	150
1760	4,072	9	36	120
1770	7,149	14	30	100
1780	5,152	9	40	110
1790	14,693	24	7	65
1800	20,359	21	18	70
1810	19,093	17	46	80
1820	22,452	18	38	70
1830	30,047	20	30	60
1840	32,253	20	25	50
1850	49,572	29	26	48
1860	78,340	43	18	40
1870	118,200	61	6	30
1881	167,700	73	6	25

In 1878 India supplied us with 17 per cent., and in 1882 with 23 per cent., of the total consumed in the United Kingdom.

TELEGRAPH.

A.—Miles and Messages (1880–81).

	Miles.	Messages, Thousands Omitted.		Miles.	Messages, Thousands Omitted.
U. Kingdom	26,500	31,400	Mexico	9,100	700
France	43,900	19,900	Brazil	4,600	300
Germany	44,600	17,400	R. Plate	6,300	300
Russia	59,700	7,300	Chili	5,600	300
Austria	34,200	8,900	Peru	1,600	100
Italy	16,400	6,500	Central Amer.	5,400	800
Spain and Port.	12,900	2,900	West Indies	3,200	200
Holl. and Belg.	5,800	5,700	Australia	26,900	5,100
Scandinavia	12,900	2,800	India	22,200	1,600
Switzerland	4,300	2,600	Japan	1,900	1,300
Roumania	3,200	1,000	Java	3,500	400
Bulg. & Servia	2,300	300	Persia	3,300	500
Greece	2,500	300	Cochin-China	1,200	100
Turkey	15,100	1,200	Egypt	5,500	700
United States	121,200	34,300	Algeria	4,300	800
Canada	11,300	1,200	Cape Colony	2,700	100

Summary.

	Miles.	Messages, Thousands Omitted.
Europe	284,100	108,200
America	168,300	38,200
Australia	26,900	5,100
Asia	32,100	3,900
Africa	12,500	1,600
Cables	105,300	...
Total	629,200	157,000

Digitized by Google

B.—International Comparison.

	Miles of telegraph.		Home tariff, pence.	Messages.	
	Per 100 sq. miles.	Per 100,000 inhab.		Per mile.	Per 100 inhab.
United Kingdom	22	74	12	1200	89
France	22	117	6	450	53
Germany	21	99	14	400	39
Russia	3	75	38	120	9
Austria	13	90	15	250	24
Italy	14	55	14	400	23
Spain	5	61	15	240	15
Portugal	7	60	15	260	15
Belgium	30	60	6	750	45
Holland	12	60	6	1280	77
Denmark	15	112	15	450	50
Sweden	3	115	15	190	22
Norway	4	250	15	160	40
Switzerland	22	160	5	620	94
Greece	13	140	9	140	20
Europe	7	88	13	380	33
United States	4	240	...	255	60
Canada	1	252	...	105	28
Argentine Republic	1	280	...	51	15
Brazil	1	54	...	66	4
Australia	1	990	...	190	188

C.—Telegraphic Cables.

Date.	Between	Miles.
1850	Dover and Calais	25
1852	Holyhead and Dublin	65
1866	Ireland and Newfoundland	1,896
1869	France and West Indies	2,584
1871	Singapore, China, Australia	4,980
1874	Lisbon and Brazil	6,840

There are 330 submarine cables with a length of 105,000 miles. There are 5 between Europe and North America, capable of transmitting altogether 100,000 words daily, but the traffic seldom reaches 50,000 words.

Atlantic cables show a total average cost of £550 per mile, but others have not exceeded £200. Subterranean cables have been laid in Germany, 330 miles, at £450 per mile. Ordinary land telegraphs have cost £80 per mile. The total outlay on land and sea telegraph lines to December 1882 was about 88 millions sterling.

D.—Remarkable Messages.

Year.	Between	Words.	Minutes.	Observations.
1848	London and Liverpool	700	65	Queen's speech.
1868	Cork and San Francisco	10	2	...
1880	London and Aberdeen	800	6	...
1882	Birmingham and London	7,300	42	Bright's speech.

Digitized by Google

E.—Increase in United Kingdom.

Year.	Miles of Wire.	Stations.	Messages, Thousands Omitted.
1851	7,303	198	48
1862	57,879	1,616	2,676
1872	87,719	5,179	15,502
1881	121,052	5,637	31,345

TELEPHONES.—In April 1882 the United States Bell Telephone Co. had 189,300 instruments working, with 49,000 miles of wire connecting 592 exchanges.

TELESCOPES.—See *Observatories.*

TEMPERATURE.

A.—The Sea.

Fathoms.	Equator.	38 N.	Fathoms.	Equator.	38 N.
0	77·9	70·0	800	37·1	38·1
100	55·6	63·5	1,000	36·9	37·9
200	46·6	60·6	1,200	36·7	37·1
300	42·2	60·0	1,500	36·1	36·7
500	38·9	46·7	2,700	34·7	35·2

B.—Mountains (Humboldt).

Height, Feet.	Depression of Thermometer.	Height, Feet.	Depression of Thermometer.
3,724	14·07	10,790	34·72
6,740	23·31	15,744	49·62
9,029	30·07	19,286	57·38

C.—Boiling-point and Barometer at Elevations.

Place.	Feet over Sea.	Mean Height of Barometer.	Boiling-point (Fahrenheit).
Sea-level . . .	0	30·0	212·0
Rome	151	29·76	211·6
Milan	420	29·45	211·1
Moscow . . .	984	28·82	210·2
Geneva . . .	1,221	28·54	209·5
Munich . . .	1,765	27·95	208·6
Madrid . . .	1,995	27·72	208·0
Briançon . . .	4,285	25·39	203·9
St. Remo . . .	5,265	24·45	202·1
St. Gothard . .	6,808	23·07	199·2
Mexico . . .	7,471	22·52	198·1
Bogota . . .	8,731	21.42	195·6
Quito	9,541	20·75	194·2
Antisana . . .	13,455	17·87	187·4

Digitized by Google

D.—Subterranean.

Austrian Mine.		Rosebridge Mine.		Well in Yorkshire.			
					Fahrenheit.		
Depth, Feet.	Fahr.	Depth, Feet.	Fahr.	Depth, Feet.	April.	June.	Dec.
300	48·8	480	64·5	0	50	70	38
600	50·7	600	66·0	100	45	65	41
1,200	53·3	1,800	80·0	200	45	55	43
1,650	61·2	2,200	88·5	300	43	52	45
1,900	61·4	2,450	94·0	350	42	46	43

See *Meteorology, Thermometer.*

TEXTILES. See *Manufactures, Operatives.*

THEATRES.

A.—Number and Ratio to Population.

	Number.	Per Million Inhab.		Number.	Per Million Inhab.
Great Britain	152	4·4	Germany	191	4·2
France	337	8·9	Russia	44	0·6
Italy	348	12·5	Austria	152	4·2
Spain	160	9·8	United States	550	10·3

B.—Theatres of London and Paris.

	Gross Receipts per Annum.	Per Inhabitant.
London	£1,320,000	7 shillings
Paris	845,000	8 ,,

Expenditure, London.

Pay to actors	£725,000
,, authors	79,000
Rent	119,000
Lighting, sundries, and profits	397,000
Total	£1,320,000

Paris theatres employ 3200 performers.

C.—Number and Ratio Burnt, since 1800.

	Number Burnt.	Ratio to Present Number, per Cent.		Number Burnt.	Ratio to Present Number, per Cent.
Great Britain	68	46	Germany	49	26
France	63	19	Russia	25	57
Italy	45	13	Austria	26	17
Spain	17	11	United States	176	32

Digitized by Google

D.—Loss of Life from Fire.

Date.	Theatre.	Victims.	Date.	Theatre.	Victims.
1772	Amsterdam	48	1847	Carlsruhe	63
1778	Saragossa	137	1857	Leghorn	102
1794	Capo d'Istria	945	1867	Philadelphia	13
1811	Richmond	78	1876	Brooklyn	283
1836	St. Petersburg	770	1880	Nice	790
1845	Canton	1,660	1881	Vienna	1,460
1846	Quebec	355	1883	Smolensk	380

THERMOMETER.

	Reaumur.	Centigrade.	Fahrenheit.
Freezing point	0	0	32
Vine cultivation	8	10	50
Cotton cultivation	16	20	68
Temperature of Brazil	24	30	87
Hatching eggs	32	40	104
	40	50	122
	48	60	140
	56	70	158
	64	80	176
	72	90	194
Water boils	80	100	212

See *Meteorology, Temperature.*

TILLAGE.

A.—Area under Crops.

	Acres, Thousands Omitted.			Acres per 100 Inhab.	Area, Percentage.	
	Grain.	Other Crops.	Total.		Tilled.	Untilled.
United Kingdom	10,655	12,223	22,878	66	29	71
France	38,130	18,090	56,220	151	43	57
Germany	34,740	27,890	62,630	138	47	53
Russia	161,200	22,400	183,600	222	13	87
Austria	36,500	20,600	57,100	155	33	67
Italy	19,100	9,200	28,300	101	38	62
Spain and Portugal	18,900	10,700	29,600	142	21	79
Belgium and Holland	4,100	1,700	5,800	61	29	71
Denmark	2,600	3,500	6,100	320	71	29
Sweden	3,600	8,200	11,800	252	12	88
Norway	500	2,300	2,800	155	4	96
Switzerland	300	1,300	1,600	60	16	84
Roumania, &c.	10,500	3,100	13,600	190	30	70
Europe	340,825	141,203	482,028	151	19	81
United States	120,900	35,600	156,500	302	7	93
Canada	5,100	9,100	14,200	335	1	99
Brazil	400	4,250	4,650	48	1	99
Argentine Republic	850	1,120	1,970	84	1	99
Chili	800	1,060	1,860	80	2	98
Australia	4,400	6,200	10,600	370	1	99
Algeria	4,100	3,100	7,200	240	21	79
Total	477,375	201,633	679,008	170	5½	94½

Digitized by Google

B.—Crops of United States.

Millions.

	1850.	1860.	1870.	1880.
Grain, bushels	868	1,240	1,388	2,699
Potatoes ,,	66	111	143	170
Yams ,,	38	42	22	33
Rice, lbs.	215	187	74	110
Tobacco ,,	200	434	263	473
Hops ,,	3	11	25	27
Hay, tons	14	19	27	35
Cotton, lbs.	1,162	2,558	1,460	2,738

For other countries see *Agriculture*.

TIMBER.

A.—Production and Consumption of Timber.

	Millions of cubic feet per annum.				Annual Consumption.	
		Consumption.				
	Production. All kinds.	Firewood.	Building, &c.	Total.	Value (thousands omitted).	Cubic ft. per Inhab.
United Kingdom	140	60	395	455	£20,250	12
France	1,080	850	430	1,280	21,400	33
Germany	1,450	760	690	1,450	24,500	32
Russia	6,400	2,770	3,350	6,120	56,300	76
Austria	1,980	1,120	760	1,880	30,100	51
Italy	480	230	280	510	12,300	18
Spain and Portugal	200	110	210	320	9,400	16
Belgium and Holland	70	20	90	110	4,700	12
Sweden and Norway	900	320	345	665	11,300	102
Europe	12,700	6,240	6,550	12,790	£190,250	41
United States	3,100	1,420	1,680	3,100	77,400	58
Canada	310	140	80	220	5,400	49
Total	16,110	7,800	8,310	16,110	£273,050	44

B.—Consumption in United Kingdom.

Year.	Millions of cubic feet.			Cubic feet per Inhab.	Per load (50 cub. ft.)	
	British.	Imported.	Total.		Duty.	Price.
1790	106	11	117	8	7s.	70s.
1803	110	12	122	8	25s.	90s.
1811	110	14	124	7	55s.	185s.
1820	115	22	137	7	65s.	160s.
1830	115	28	143	6	55s.	150s.
1840	115	41	156	6	55s.	150s.
1850	120	85	205	8	7s.	70s.
1860	120	145	265	9	4s.	68s.
1870	130	252	382	12	...	65s.
1881	140	290	430	12	...	52s.

Digitized by Google

C.—Principal Kinds.

	Density.	Cohesion.		Density.	Cohesion.
Poplar	0·477	1·97	Sycamore	0·692	6·16
Fir	0·493	4·18	Ash	0.697	6·78
Pine	0·559	2·48	Acacia	0·717	7·93
Alder	0·601	4·54	Oak	0·808	6·49
Aspen	0·602	7·20	Birch	0·812	4·30
Maple	0·674	3·58	Beech	0·823	3·57

D.—Comparative Strength.

Poplar	538	Fir	585	Sycamore	744
Pine	565	Birch	672	Ash	983
		Oak	1,000		

E.—Maximum Age.

	Years.		Years.		Years.
Palm	250	Lemon	640	Spruce	1,200
Elm	355	Plane	720	Oak	1,600
Cypress	388	Cedar	800	Olive	2,000
Ivy	448	Chestnut	860	Yew	2,880
Maple	516	Walnut	900	Baobab	5,100
Larch	576	Lime	1,076	Dragon	5,900

F.—Scale for ascertaining the Age of Trees.

Age, Years.	Inches Diameter.				
	Oak.	Larch.	Elm.	Spruce.	Yew.
10	5	4	1	4	1
20	10	9	5	8	2
30	14	14	10	12	3
50	23	24	23	19	4
70	32	33	36	24	6
100	41	40	50	27	9
150	54	50	61	36	14
200	64	58	71	44	20
250	74	67	83	52	25
300	84	75	94	60	30

Eucalyptus, or Australian gum-tree, sometimes grows 24 feet in 3 months; bamboo, 2 feet in 24 hours.

G.—Remarkable Plantations.

Planter.	Locality.	No. of Trees.	Area, Acres.
Duke of Athol	Dunkeld	28,000,000	16,600
Earl of Seafield	Inverness	60,000,000	40,000
French Government	Algeria	12,700,000	130,000

Among recent planters in Ireland is Lord Powerscourt, who began in 1869 and has now 2½ million larch and fir (some 20 inches girth and 40 feet high) in an area of 1000 acres. The plants cost £2300, and the total outlay has been 66 shillings per acre. He expects no return till the 25th year, and thenceforward 8 shillings an acre: the plantation in its 45th year will represent a standing crop worth £50 an acre.

Digitized by Google

TIME.

At London, Noon.

Forenoon.

Boston	7·15	Havanna	6·30	Quebec	7·12
Buenos Ayres	8·06	Lima	6·52	Quito	6·45
Caracas	7·32	Lisbon	11·24	Rio Janeiro	9·07
Chicago	6·26	Madeira	10·48	San Francisco	3·52
Demerara	8·06	Madrid	11·46	Sandwich Islands	1·28
Dublin	11·35	Mexico	5·24	Sierra Leone	11·07
Edinburgh	11·47	Montreal	7·06	Teneriffe	10·52
Falkland Islands	8·04	New Orleans	6·00	Trinidad	7·55
Gibraltar	11·38	New York	7·05	Valparaiso	7·13
Glasgow	11·44	Panama	6·42	Washington	6·52
Halifax	7·44	Philadelphia	7·50		

*Afternoon.**

Alexandria	2·00	Geneva	12·25	Pekin	7·46
Algiers	12·13	Jerusalem	2·21	Rome	12·50
Amsterdam	12·20	Lyons	12·20	St. Petersburg	2·04
Berlin	12·54	Madras	5·21	Singapore	6·55
Bombay	4·51	Malta	12·58	Stockholm	1·12
Buda-Pesth	1·16	Manilla	8·03	Sydney	10·05
Cairo	2·07	Mauritius	3·48	Tunis	12·40
Calcutta	5·54	Melbourne	9·40	Venice	12·50
Cape Town	1·12	Moscow	2·30	Vienna	1·06
Constantinople	1·56	Naples	12·57	Yokohama	9·20
Dresden	12·54	Paris	12·10		

TIN.

A.—Production of Tin.

	Tons. Tin Ore.	Tin Metal.	Value of Ore.	Metal Ratio, Per Cent.
Great Britain	13,700	9,200	£670,000	66
Australia	24,000	17,500	1,250,000	74
Java	15,000	9,000	700,000	60
Total	52,700	35,700	£2,620,000	69

B.—Production and Consumption in Great Britain.

Years.	Tons, Tin Metal. British.	Net Import.	Total.	Value Per Ton.	Consumption. Tons.	Lbs. per 100 Inhab.
1800–20 aver.	2,510	...	2,510	£76	1,260	15
1821–40 ,,	4,180	...	4,180	70	2,900	26
1841–60 ,,	5,910	450	6,360	107	6,360	51
1861	7,450	...	7,450	122	7,240	55
1871	10,900	810	11,710	136	11,710	84
1880	9,200	6,550	15,750	91	15,750	99

* Dresden, for example, 12·54, signifies 54 minutes past noon.

Digitized by Google

TITHES.—In England and Wales 11,784 clergymen collect £4,054,000, say £342 each.

TITLES.—The fees in Great Britain for letters-patent are :—

Duke . .	£350	Earl . .	£250	Baron . .	£150
Marquis . .	300	Viscount .	200	Baronet . .	100

TOBACCO.

A.—Production.

	Acres.	Tons.	Value of Crop.
United States . . .	610,000	210,000	£10,500,000
West Indies . . .	50,000	22,000	3,300,000
Brazil	105,000	38,000	1,400,000
Japan	100,000	40,000	1,600,000
Java	110,000	46,000	1,700,000
India	580,000	170,000	6,100,000
Russia	110,000	75,000	2,600,000
Austria	140,000	65,000	3,300,000
Turkey	90,000	35,000	2,700,000
Germany	52,000	32,000	1,500,000
France	26,000	15,000	900,000
Manilla, &c. . . .	54,000	20,000	1,100,000
Total	2,029,000	768,000	£36,700,000

B.—Consumption per Annum.

	Tons.	Ozs. per Inhab.		Tons.	Ozs. per Inhab.
United Kingdom	23,000	23	Turkey . . .	22,000	70
France	32,000	29	Switzerland .	7,000	82
Germany . . .	91,000	72	Europe . . .	383,000	44
Russia	54,000	24	United States .	85,000	59
Austria . . .	85,000	80	India . . .	165,000	30
Italy	18,000	22	Japan . . .	38,000	39
Spain and Port. .	18,000	32	Brazil . . .	20,000	70
Belg. and Holl. .	23,000	84	Colonies, &c. .	77,000	...
Scandinavia . .	10,000	40	The World .	768,000	...

C.—Exportation from United States.

Year.	Million Lbs.	Lbs. per Inhab.	Value, Thousands.	Per Lb., Pence.
1790 . . .	132	33	...	...
1800 . . .	89	17	£1,100	3·0
1810 . . .	92	13	960	2·5
1820 . . .	93	9	1,550	4·0
1830 . . .	96	8	1,100	2·8
1840 . . .	141	8	1,920	3·3
1850 . . .	168	7	3,510	5·0
1860 . . .	193	6	2,460	3·0
1870 . . .	188	5	4,300	5·6
1880 . . .	217	4	3,420	3·7

Digitized by Google

D.—Tobacco Crop of United States.

	1871.	1880.	Average of 10 Years.
Acres	580,000	610,000	634,000
Crop, million lbs.	426	460	473
Per acre, lbs.	734	754	747
Value of crop	£8,760,000	£10,520,000	£8,910,000
Per acre, shillings	292	344	281

About 55 per cent. of the crop is exported.

E.—Consumption in United Kingdom and France.

	Million Lbs.		Ozs. per Inhabitant.		Duty, Pence per Lb.	
	United Kingdom.	France.	United Kingdom.	France.	United Kingdom.	France.
1801	17	...	16	...	20	...
1811	21	20	18	11	27	6
1821	16	22	12	12	48	6
1831	20	24	13	12	36	12
1841	22	36	13	17	36	12
1851	31	44	18	20	36	24
1861	35	56	19	24	36	30
1872	44	61	22	26	36	40
1881	51	70	23	29	42	44

TRADES' UNIONS.

A.—Bevans's List of Strikes (1870–79).

Trades.		Districts.		Towns.	
Builders	598	Scotland	473	London	56
Colliers	339	York	338	Manchester	44
Textile	277	Lancashire	149	Leeds	73
Carpenters	187	Northumberland	138	Sheffield	66
Masons	151	South West	135	Glasgow	85
Various	800	Various	1,119	Edinburgh	65
				Newcastle	63
Total	2,352	Total	2,352		

B.—Howell's Balance-Sheet (1851–81.)

Payments.

Sick operatives	£1,004,000
Out of work do.	1,979,000
On strike do.	274,000
Pensions	330,000
Funerals	319,000
Accidents	120,000
Loans	67,000
Total	£4,093,000

Digitized by Google

TRAMWAYS.

A.—British.

(1881.)	England.	Scotland.	Ireland.	U. Kingdom.
Miles	376	60	52	488
Million passengers	144	49	13	206
Average fare	1·96d.	1·34d.	2·46d.	1·83d.
,, expense	1·59d.	0·92d.	1·93d.	1·44d.
Net profit	0·37d.	0·42d.	0·53d.	0·39d.
Do. per mile	£591	£1,440	£535	£697
Profit on capital	4·30	9·40	3·16	4·91
Capital, per mile	£13,700	15,300	16,900	14,200

B.—French.

(1880.)	Sum.	Per Mile.
Receipts	£1,080,500	£4,002
Expenses	1,039,500	3,851
Profit	41,000	151
Capital	4,330,800	16,040

Net profit on capital less than 1 per cent.

C.—American (United States and Canada).

Lines	415	Horses	100,000
Miles	3,000	Million passengers	1,214
Officials	35,000	Capital	£31,000,000

The horses, last 4 years, draw 18,000 cars, and consume annually 150,000 tons hay and 300,000 tons grain.

TRANSPORT.

A.—Sea-borne Merchandise (the World).

	Annual Average, Tons, Thousands Omitted.		1880. Tons, Thousands Omitted.	Ratio.	
	1861-70.	1871-80.		1861-70.	1880.
Grain	4,375	10,072	10,530	8·1	8·9
Cotton	486	995	1,170	0·9	1·0
Wool	121	252	301	0·2	0·3
Meat	125	380	660	0·2	0·6
Coal	14,200	22,100	30,400	26·3	25·8
Iron	1,920	3,490	4,588	3·6	3·9
Sugar	1,260	2,086	2,350	2·3	2·0
Clothing	1,410	2,520	2,815	2·6	2·4
Coffee	346	452	527	0·6	0·5
Timber	16,170	21,215	23,550	29·7	20·0
Sundries	13,807	26,778	40,875	25·5	34·6
Total	54,220	90,340	117,766	100·0	100·0

"Sundries" includes passengers' baggage.

Digitized by Google

B.—Sea-borne Merchandise and Value (the World).

Year.	Tons, Millions.	Value, Million £.	Value per Ton.	Increase of Decade. Million Tons.	Million £.
1830 . .	10	193	£19	...	...
1840 . .	15	287	19	5	94
1850 . .	25	438	17	10	151
1860 . .	41	701	17	16	263
1870 . .	71	995	14	30	294
1882 . .	129	1,360	10½	58	365

In 1882 the freight earned averaged 16 shillings per ton, say 8 per cent. of value.

C.—Goods Traffic on Railways.

	Million Tons.		Cwts. per Inhabitant.		Traffic of 1880.	
	1870.	1880.	1870.	1880.	Tons per Mile.	Pence per Ton.
United Kingdom .	107	215	103	124	12,400	38
France	52	70	29	36	4,700	80
Germany	98	137	49	61	6,600	48
Russia	9	35	3	9	2,400	...
Austria	25	47	14	26	3,900	...
Italy	6	10	5	7	1,900	105
Spain and Portugal	4	7	5	7	1,400	116
Belgium	24	30	98	108	11,800	28
Holland	2	4	12	20	3,200	53
Scandinavia . . .	4	8	12	20	1,550	...
Switzerland . . .	4	6	33	44	3,700	...
Europe	398	569	27	35	5,550	...
United States . .	155	290	81	108	3,260	52
Canada	4	10	25	45	1,620	...
Australia	1	4	10	30	900	...
India	5	9	...	...	1,500	...
South America, &c.	5	11	...	...	...	...
Total . . .	568	893	...	...	3,870	66

The freight charge, "pence per ton," is irrespective of distance, but in most countries it averaged one penny per mile (see *Freight*), the gross result being equal to 110 pence for 100 miles per ton. See *Railways, Shipping.*

D.—Goods Traffic in France (1877).

	Miles.	Tons.	Tons per Mile.	Tons per 100 Inhab.
Canals and rivers .	7,140	20,400,000	2,850	56
Highroads . .	23,800	17,400,000	730	48
Railways . .	13,100	85,100,000	6,600	230
Total . .	44,040	122,900,000	2,800	334

Digitized by Google

The above does not show the actual weight carried, but its equivalent, counting 60 miles as a journey. "Highroads" are only the main roads, without counting 214,000 miles of other roads.

TRAVELLERS.

A.—The railways of the world carry 145 million passengers monthly: average fare, 19 pence; average journey, 21 miles.

B.—The tramways of Great Britain, France, and North America carry 130 million passengers monthly: average fare, 2 pence.

C.—The steamers between Europe and North America carry 70,000 passengers monthly: average fare, £5.

D.—The steamers between Great Britain and the Continent carry 120,000 passengers monthly.

E.—The monthly average of travellers arriving in Paris (not counting Banlieue or local traffic) is 1,200,000 persons.

F.—The French highway traffic, that is, of persons travelling in coaches, is 900,000 per month.

G.—The local traffic averages 21 million persons monthly in Paris, and 28 millions in London.

H.—PARIS LOCAL TRAFFIC.

Year.	Monthly Average.	Ratio to Population.
1854	2,840,000	240 to 100
1860	5,930,000	365 ,, 100
1872	9,260,000	530 ,, 100
1880	20,810,000	935 ,, 100

I.—TRAVELLERS IN SWITZERLAND (1879).

	Number.	Sum Spent.	Per Head.
Americans	210,000	£1,680,000	£8
Russians	160,000	1,600,000	10
Germans	350,000	700,000	2
English, &c.	227,500	1,820,000	8
Total	947,500	£5,800,000	£6

K.—TRAVELLERS IN RUSSIA (1870).

Germans	237,000
Austrians	123,000
English, &c.	28,000
Total	398,000

See *Conveyances, Passengers, Railways.*

Digitized by Google

TRUFFLES.—Perigord produces 1500 tons per annum, worth £1000 per ton; 90 per cent. are consumed in France.

TUG-BOATS.—One tug on the Mississippi can take in 6 days, from St. Louis to New Orleans, boats carrying 10,000 tons of grain, which would require 70 railway trains of 15 waggons each.

The tugs in Suez Canal tow a vessel from sea to sea in 44 hours, and charge £200.

TULIPS.—One root of the "Viceroy" sold at Amsterdam for £2600, and when a law was passed against paying over £500 for a root, a "Semper Augustus" fetched £460, with a carriage and pair of horses. Holland has 600 acres under tulips, and exports the value of £110,000 per annum.

TUNNELS.

A.—Existing Tunnels.

Date.	Tunnel.	Length, Yards.	Cost per yard.	Maker.	Years in making.	Aperture feet.
1827 .	Harecastle	2,926	...	Telford	3	14×16
1835 .	Kilsby	2,070	£154	Stephenson	..	27×24
1843 .	Thames	560	1,100	Brunel	11	38×22
1870 ,	Mont Cenis	13,540	201	Grattoni	13	10×8
1879 .	Baltimore	10,800	...	...	...	...
1881 .	St. Gothard	16,390	152	Favre	8	9×8

There is a tunnel of 5200 yards on the Sheffield and Manchester Railway, the longest in the United Kingdom.

B.—In Construction.

Tunnel.	Length, yards.	Estimated cost.	Per yard.	Progress, feet daily.	Aperture, feet.	Begun year.
Channel .	40,000	£3,200,000	£80	60	...	1882
Mersey .	1,740	350,000	200	30	27×20	1882
Schemnitz .	26,400	...	...	3	8½×7	1782
Hoosac .	7,900	...	...	...	24×9	1870
Aarlberg .	11,300	1,800,000	165	38	...	1865
Hudson .	1.833	2,000,000	1,100	4	18×18	1880
Comstock .	6,160	1,000,000	160	15	10×14	...
Panama .	7,000	5,600,000	800	...	100×150	1881
Messina .	14,800	2,600,000	180	...	...	1883
Hamburg .	800	139,000	160	...	...	1883

The only tunnel in Australia is the Belmore, 6 × 4½ feet, progress one foot daily. The Schemnitz, in Germany, which is in progress since the eighteenth century, is expected to be finished by 1890. The works of the Channel tunnel are suspended (August 1883), owing to opposition in Parliament.

Digitized by Google

C.—Boring Engines.

Date.	Inventor.	Strokes per Minute.	Date.	Inventor.	Strokes per Minute.
1813	Trevithick	...	1873	Darlington	500
1853	Bartlett	...	1873	Ferroux	...
1857	Sommeiller	400	1873	Ingersoll	400
1863	Sachs	400	1875	Barrow	...
1868	Dubois	300	1875	Ullathorne	...
1863	Francois	300	1876	Beaumont	...
1869	Burleigh	400	1876	Geach	500
1869	Ostercamp	220	1877	Jordan	...
1872	M'Kean	500	1877	Schramm	500

D.—Methods and Results.

Tunnel.	Feet Opening.	Engine.	Pressure Lbs. Sq. In.	Tons Excavated.	Tons Daily.
Thames	800	Brunel	...	45,000	12
Mont Cenis	81	Sommeiller	90	240,000	60
Airolo	70	M'Kean	90	...	...
Schemnitz	60	Sachs	60	45,000	15
Comstock	140	Burleigh	70	...	155
Hudson	324	...	...	52,000	80
Ronchamps	52	Dubois	67	...	...
Belmore	27	Darlington	50	...	3
St. Gothard	72	Ferroux	90	265,000	102

The Channel and Mersey tunnels employ Beaumont's compressed-air borer. The cost of excavation was £13 per ton of clay in the Thames Tunnel, £11 per ton of rock in Mont Cenis, and £9 per ton in St. Gothard. See *Diamond-drill.*

TURNIPS.—The United Kingdom had in 1881 an area of 2,341,000 acres under turnips, yielding a crop of 47 million tons, equal for cattle-food to 16 million tons hay.

TURKEYS.—There are 2,400,000 in United Kingdom.

TWINS.

Per 1000 *Births.*

England	11·3	Bavaria	14·1	Belgium	9·1
Scotland	11·7	Russia	12·1	Holland	12·8
Ireland	17·6	Austria	13·4	Denmark	13·7
France	10·1	Italy	11·5	Sweden	13·6
Prussia	12·6	Switzerland	12·0	Norway	11·8
Saxony	12·2	Spain	8·4	Iceland	14·2

Twins give 108 males to 100 females.

Digitized by Google

TYPES.—The *Times* uses 2¼ million, the other morning papers not quite a million each in their daily impression. See *Letters.*

TYPHUS.—Deaths from typhus in Vienna averaged 734 per annum in the years 1865–71, but since the sanitary improvements of 1872 the average has been only 291 per annum: the general death-rate has declined 2 per cent. relatively. See *Diseases.*

U

UMBRELLAS.—The progress of this manufacture in France has been as follows:—

Year.	Makers.	Value.
1830	160	£280,000
1847	303	405,000
1882	890	1,180,000

At an average of 4 francs it would be 7½ million umbrellas for 1882, or nearly one for each inhabited house in France.

UNIVERSITIES.

A.—General Summary.

	Universities.	Professors.	Students.	Students per Million Inhabitants.
United Kingdom	11	344	13,400	390
France	1	180	9,300	250
Germany	21	1,920	25,084	545
Russia	8	582	6,900	82
Austria	10	1,810	13,600	360
Italy	17	600	11,140	405
Spain	10	380	16,200	990
Portugal	1	40	1,300	405
Belgium	4	80	2,400	440
Holland	4	80	1,600	400
Denmark	1	40	1,400	700
Sweden	2	173	2,010	310
Norway	1	46	830	460
Switzerland	3	90	2,000	700
Greece	2	40	800	560
Europe	96	7,025	106,964	320
United States	360	4,240	69,400	1,280
Total	456	11,265	176,364	480

Digitized by Google

B.—UNIVERSITIES OF THE UNITED KINGDOM (1876).

	Students.	Annual Expenditure.	Per Student.
Oxford	1,860	£414,000	£220
Cambridge . . .	1,920	340,000	177
Dublin	810	160,000	198
Edinburgh . . .	2,320	200,000	87
Glasgow	1,340	90,000	68
Aberdeen . . .	650	30,000	45
St. Andrew's . .	300	17,000	56

Besides the above, there are the universities of London, Durham, Manchester, and the new Royal University of Ireland.

C.—INCOMES OF OXFORD AND CAMBRIDGE.

	No.		Income.		Average.	
	Oxford.	Cambridge.	Oxford.	Cambridge.	Oxford.	Cambridge.
Principals .	24	17	£33,000	£20,000	£1,380	£1,200
Professors .	40	36	24,000	12,000	600	330
Fellows . .	360	430	102,000	103,000	280	240
Scholars . .	480	790	44,000	33,000	92	42
Libraries, &c.	...	...	211,000	172,000	...	...
Total . .	904	1,273	£414,000	£340,000	£220	£135

The endowments are £280,000 per annum in Oxford, and £235,000 in Cambridge, the rest being made up of various revenues.

D.—CAMBRIDGE B.A. GRADUATES.

Year.	No.	Year.	No.	Year.	No.
1500 . .	7	1620 . .	271	1830 . .	324
1530 . .	40	1628 . .	315	1835 . .	314
1560 . .	60	1648 . .	174	1840 . .	339
1600 . .	167	1658 . .	174		

E.—INDIAN COMPETITIVE EXAMINATIONS (WINNERS).

	Per Cent.
Oxford students	28
Cambridge students	24
Dublin students	17
Scotch Universities	14
London, Cork, &c.	17
	100

Digitized by Google

F.—Largest Universities.

Founded A.D.	University.	Professors.	Students.
1206	Paris	180	9,300
1365	Vienna	160	3,975
1810	Berlin	142	4,100
1409	Leipsic	120	3,110
1224	Naples	110	2,960
1635	Buda-Pesth	141	2,375
1582	Edinburgh	43	2,320
1472	Munich	82	2,017
1257	Cambridge	36	1,920
1280	Oxford	40	1,860
1755	Moscow	117	1,620
1476	Upsal	104	1,480
1479	Copenhagen	60	1,400
1303	Rome	50	1,300
1240	Salamanca	40	1,300
1638	Harvard	...	...

The University of Paris has 2500 law students, 2800 medical, 1500 science, and 2500 belles-lettres.

G.—German Universites.

Matriculated in 1883.

Berlin	4,300	Gottingen	1,100	Greiswold	710
Leipsic	3,100	Wurzburg	1,100	Erlangen	690
Munich	2,300	Heidelberg	1,020	Jena	620
Breslau	1,600	Konigsberg	910	Kiel	410
Halle	1,400	Marburg.	820	Greissen	400
Tubingen	1,400	Strasburg	800	Munster	320
Bonn	1,200	Freyburg	780	Rostock	220

In the German universities the students are 89 per cent. Germans and 11 per cent. of other nations, Americans being 1 per cent.

H.—Russian Universities.

	Profs.	Students.		Profs.	Students.
St. Petersburg	45	1,200	Kiev	92	780
Moscow	117	1,600	Kazan	67	620
Warsaw	76	1,020	Kharkov	62	540
Dorpat	66	710	Odessa	54	390

V

VEGETARIANS.—Death-rate in India is 2·05 among the vegetarian population, per 1000 persons per annum, and only 1·89 among non-vegetarians, a difference of 8 per cent.

Digitized by Google

VIADUCTS.

	Length, Feet.	No. of Arches.	Span, Feet.	Height, Feet.	Width, Feet.	Cost, pence per Cubic Yd.
Weaver . .	1,484	20	60	84	30	92
Stockport . .	1,792	26	63	90	32	91
Dane . . .	1,717	23	63	88	31	75
Rugby . . .	720	13	50	51	30	88
Tamworth .	710	20	30	45	—	99
Llangollen .	1,800	19	85	150	—	90
Wharncliffe .	895	11	70	83	35	144
Trent . . .	1,286	56	20	33	29	86
Kinzua (N.Y.)	2,050	20	60	301	—	30?
Cantal (Fr.) .	1,880	—	—	413	—	44?

The Kinzua, built by Mr. Barnes, seems to have cost about 30 pence per cubic yard, employing 2000 tons iron and 7000 tons masonry, supported by 20 iron piers, and costing altogether £62,000. The Cantal, under the direction of M. Eiffel, approaches completion: estimate, £120,000.

VINEYARDS. See *Wines.*

VITAL STATISTICS.

A.—Decade ending 1880.

	Per 1000 Inhabitants per Annum.				Medium Pop., Thousands Omitted.
	Births.	Deaths.	Increase.	Marriages.	
England . .	35·5	21·5	14·0	8·15	24,110
Scotland . .	35·2	21·8	13·4	7·24	3,513
Ireland . .	26·2	18·1	8·1	4·67	5,342
U. Kingdom .	34·0	20·9	13·1	7 46	32,965
France . .	25·6	24·3	1·3	7·95	36,906
Germany . .	39·8	27·1	12·7	8·85	42,727
Austria . .	39·9	31·2	8·7	8·55	21,265
Hungary . .	43·0	40·1	2·9	10·30	15,562
Italy . .	36·9	29·7	7·2	7·65	27,619
Spain . .	37·2	29·7	7·5	7·55	16,713
Sweden . .	30·3	18·4	11·9	6·80	4,368
Denmark .	31·2	19·3	11·9	7·80	1,877

B.—United Kingdom.

	England, per 1000 Inhab. per Annum.				Medium Population, Thousands Omitted.
	Births.	Deaths.	Increase.	Marriages.	
1841–50 . .	32·6	22.4	10·2	8·05	16,840
1851–60 . .	34·1	22·2	11·9	8·43	18,940
1861–70 . .	35·3	22·6	12·7	8·33	21,250
1871–80 . .	35·5	21·5	14·0	8·15	24,110
	Scotland.				
1855–60 . .	33·9	20·8	13·1	6·84	3,020
1861–70 . .	35·0	22·0	13·0	7·06	3,202
1871–80 . .	35·2	21·8	13·4	7·24	3,513
	Ireland.				
1864–70 . .	26·3	16·7	9·6	5·24	5,506
1871–80 . .	26·2	18·1	8·1	4·67	5,342

Digitized by Google

C.—FRENCH RATES SINCE 1800.

Years.	Births.	Deaths.	Increase.	Marriages.
1800–10	31·9	27·7	4·2	7·6
1811–20	31·7	26·0	5·7	7·9
1821–30	30·9	25·0	5·9	7·8
1831–40	29·0	24·8	4·2	8·0
1841–50	27·4	23·3	4·1	8·0
1851–60	26·3	23·9	2·4	7·9
1861–70	26·6	23·0	3·6	8·0
1871–80	25·6	24·3	1·3	7·9

D.—UNITED STATES NATURAL INCREASE.

Years.	Per Cent.	Years.	Per Cent.
1790–1800	34·1	1841–50	26·2
1801–10	34·4	1851–60	24·2
1811–20	32·5	1861–70	15·4
1821–30	31·8	1871–80	22·8
1831–40	28·1		

The above shows the net increase after deducting for immigration: see page 361.

See *Births, Deaths, Marriages.*

VOLUNTEERS IN GREAT BRITAIN.—The following table shows the roll and number of efficients:—

	Roll.	Efficient.
1860	160,300	106,400
1865	226,700	133,800
1870	245,000	170,700
1875	238,300	168,700
1880	243,500	196,900

Effectives in 1882.	
Cavalry	600
Engineers, &c.	8,800
Artillery	37,800
Infantry	159,500
Total	206,700

W

WAGES.

A.—DIOCLETIAN'S TARIFF (A.D. 303).

English Pence Daily, without Food.

Shepherd . . 10	Labourer . . 10	Painter . . 30
Ass driver . . 10	Mason . . 20	Smith . . . 20
Baker . . . 20	Carpenter . 20	Stonecutter . 25

The pay to a brickmaker was 12 pence per 100, to a sheep-shearer 80 pence per 100, to a common schoolmaster 30 pence per month, to one who taught Greek or geometry 100 pence per month, for each pupil, and a lawyer's fee was 600 pence.

Digitized by Google

B.—Wages in England, per Annum, Nominal.

Year.	Bailiff.	Shepherd.	Labourer.	Woman.	Boy.
1400	£1 0 0	£0 16 0	£0 12 0	£0 8 0	£0 6 0
1450	1 5 0	1 0 0	0 16 0	0 12 0	0 8 0
1500	1 12 0	1 6 0	1 0 0	0 14 0	0 10 0
1550	1 16 0	1 10 0	1 6 0	0 16 0	0 12 0
1600	2 6 0	1 16 0	1 12 0	1 0 0	0 18 0
1650	5 0 0	4 0 0	2 10 0	1 12 0	1 4 0
1700	6 0 0	5 0 0	4 0 0	3 0 0	2 10 0
1750	8 0 0	6 10 0	5 0 0	4 0 0	3 0 0
1800	20 0 0	16 0 0	12 0 0	8 0 0	6 0 0
1850	40 0 0	25 0 0	20 0 0	10 0 0	8 0 0
1880	52 0 0	36 0 0	30 0 0	15 0 0	10 0 0

C.—Same Table in Weight of Silver.

Year.	Bailiff.	Shepherd.	Labourer.	Woman.	Boy.
1400	£2 6 6	£1 17 0	£1 8 0	£0 18 6	£0 14 0
1500	2 9 0	2 0 0	1 11 0	1 2 0	0 15 6
1600	2 11 0	2 0 0	1 15 0	1 2 0	1 0 0
1700	6 6 0	5 5 0	4 4 0	3 3 0	2 12 0
1800	21 0 0	16 16 0	12 12 0	8 8 0	6 6 0
1880	52 0 0	36 0 0	30 0 0	15 0 0	10 0 0

D.—Same Table in Purchasing Value.

Year.	Bailiff.	Shepherd.	Labourer.	Woman.	Boy.
1400	£7 7 0	£5 18 0	£4 8 0	£3 0 0	£2 4 0
1500	9 12 0	7 16 0	6 0 0	4 4 0	3 0 0
1600	7 10 0	6 0 0	5 5 0	3 6 0	3 0 0
1700	12 0 0	10 0 0	8 0 0	6 0 0	5 0 0
1750	15 0 0	12 0 0	9 10 0	7 10 0	5 14 0
1800	28 0 0	22 8 0	16 16 0	11 4 0	8 8 0
1880	52 0 0	36 0 0	30 0 0	15 0 0	10 0 0

E.—Artisan's Wages in England.

Shillings per Week.

Year.	Blacksmith.	Mason.	Carpenter.	Plumber.	Cotton-Spinner.
1740	16	16	15	18	12
1780	17	17	15	18	12
1820	24	25	20	25	16
1840	21	23	20	22	18
1860	28	30	25	30	20
1880	32	35	30	35	24

F.—Earnings of British Working-Classes (1882).

	Number.	Earnings, Million £.	Average per Annum.
England	6,131,000	374	£61 0 2
Scotland	929,000	46	49 10 4
Ireland	1,482,000	36	24 7 0
U. Kingdom	8,542,000	456	£53 6 1

Digitized by Google

G.—Wages in France, Pence Daily.

	1700.	1750.	1790.	1810.	1850.	1880.
Printer	18	20	25	30	25	35
Painter	15	18	20	35	22	33
Carpenter	15	18	20	35	22	35
Tailor	10	15	18	30	20	28
Blacksmith	15	18	20	30	25	35
Builder	15	18	20	35	22	35
Bootmaker	10	15	18	30	21	28
Plumber	15	18	20	35	22	33
Baker	10	15	18	30	20	33
Milliner	6	8	9	10	13	20
Laundress	5	6	8	10	13	18
Farm-labourer	8	10	12	18	20	25
Woman ,,	4	5	6	9	10	15
Boy ,,	2	2	3	4	5	7

H.—Rise of Agricultural Wages.

	Day-Labourer, Pence.		In-Door, per Annum.		Female do., per Annum.	
	1835.	1880.	1835.	1880.	1835.	1880.
England	20	30	£12	£20	£6	£9
Scotland	16	28	9	18	5	8
Ireland	8	18	5	10	2	4
France	15	25	8	12	3	6
Germany	8	18	4	10	2	5
Russia	6	12	3	8	2	4
Austria	10	20	8	12	2	4
Italy	4	10	2	6	1	3
Holland	9	20	6	10	3	5
Belgium	9	20	6	10	3	5
Scandinavia	8	14	4	8	2	4
United States	...	...	20	27	15	22

I.—Artisans' Wages in 1880.

	Shillings per week.						
	Great Britain.	France.	Belgium.	Germany.	Italy.	New York.	Chicago.
Printer	32	20	19	20	16	54	62
Painter	32	21	18	16	19	54	38
Plumber	33	23	25	15	16	62	66
Tailor	25	21	17	15	18	58	50
Shoemaker	31	20	14	13	18	62	56
Carpenter	33	23	23	16	17	44	42
Mason	35	17	25	15	15	56	33
Smith	31	23	18	15	16	50	44
Tinsmith	28	18	20	16	15	50	44
Baker	27	23	18	15	16	...	42
Collier	24	15	14	16	...	...	...

Digitized by Google

K.—Wages in United States.

	Millions of Dollars.				Per Operative, in £ Sterling.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
Maine . . .	7	8	14	14	51	47	52	53
N. Hampshire	6	8	14	15	46	50	60	65
Vermont . .	2	3	6	5	52	66	61	58
Rhode Island .	5	9	19	21	50	57	66	67
Connecticut .	12	19	39	44	51	60	75	78
Massachussetts	42	57	118	128	49	55	76	72
New England	74	104	210	227	49	55	72	70
New York . .	49	65	142	199	52	59	72	79
New Jersey .	9	16	33	46	49	59	80	73
Pennsylvania .	37	60	128	134	52	56	74	70
Delaware . .	1	2	4	4	50	60	70	62
Maryland . .	7	7	13	19	50	52	58	54
Middle . .	103	150	320	402	51	58	72	76
Virginia . .	5	9	9	11	35	50	49	41
Georgia . . .	2	3	5	5	44	55	52	42
Kentucky . .	5	6	9	12	46	57	53	60
Tennessee . .	2	3	5	5	34	50	47	47
Louisiana . .	2	4	5	4	56	78	36	60
Various . . .	4	9	12	15	44	52	48	50
South . . .	20	34	45	52	50	57	45	47
Ohio	13	22	49	62	51	59	65	69
Illinois . . .	3	8	31	57	50	53	69	75
Michigan . .	3	7	21	29	65	60	60	77
Wisconsin . .	2	4	14	19	65	55	56	67
Missouri . .	5	7	31	24	64	70	88	70
Indiana . . .	4	6	18	22	58	60	57	70
Iowa	...	2	7	10	...	65	55	66
Minnesota . .	...	...	4	9	...	...	65	70
Various . . .	8	38	35	38	58	60	63	70
West . . .	38	94	210	270	58	60	64	70
The Union .	235	382	785	951	51	58	69	73

L.—American Wages and Manufactures Compared.

Ratio of Wages to Manufactures Produced.

States.	1850.	1860.	1870.	1880.	Average, per Cent.
New England . .	26	22	21	21	22
Middle . . .	22	19	18	18	19
South	21	18	16	16	18
West	21	17	17	16	18
Union	24	19	18	18	20

Digitized by Google

M.—Relation between Wages and Food.

	Shillings per week.			Ratio.		
	Wages.	Food.	Surplus.	Wages.	Food.	Surplus.
Great Britain . .	31	14	19	100	45	55
France . . .	21	12	10	100	57	43
Germany . . .	16	10	6	100	62	38
Belgium . . .	20	12	8	100	60	40
Italy	15	9	6	100	60	40
Spain	16	10	6	100	62	38
United States . .	48	16	32	100	33	67
Australia . . .	40	11	29	100	28	72

N.—Cotton Mill Operatives' Wages.

Shillings per week.

	England.	United States.		England.	United States.
Sizers . . .	36	40	Cardboys . .	14	10
Weavers . .	30	35	Doffers . .	15	16
Pickers . .	15	28	Warpers . .	15	16
Strippers . .	17	28	Winders . .	15	16

O.—Woollen Operatives.

	Shillings per Week.				
	England.	France.	Belgium.	Germany.	U. States.
Sorter . .	24	22	10*	5*	44
Carder . .	24	11*	8*	8*	25
Spinner . .	12*	11*	—	12	26*
Dresser . .	24	16	12	7*	54
Weaver . .	30	24	18	12	35
Fireman . .	26	19	15	—	35
Carpenter . .	33	27	15	—	52
Engineer . .	40	27	18	16	75

P.—Wages in Massachusetts (1882).

Manufacture.	Operatives.	Days, per Annum.	Earned, per Head.	Pence, per Day.
Cottons . .	59,700	306	£54	42
Boots . .	37,100	271	79	69
Woollens . .	22,600	301	65	52
Metals . .	18,300	294	88	72
Machines . .	11,600	303	102	81
Clothing . .	11,500	294	73	59
Sundries . .	47,100	281	89	63
Total . .	207,900	291	75	62

* Females.

Digitized by Google

Q.—Wages of Working-Classes, United Kingdom (Levi).

	Millions Sterling per Annum.			
	England.	Scotland.	Ireland.	U. Kingdom.
Agriculture	44	8	23	75
Textiles	33	6	8	47
Building	35	4	4	43
Clothing	21	5	7	33
Metals	27	3	2	32
Ships and Railways	25	2	1	28
Mines	13	2	—	15
Servants	47	5	8	60
Various	66	8	12	86
Total	311	43	65	419

The above was for the year 1862, and is no longer applicable. See *Table F.*

WARS.

A.—Wars Since 1793.

Date	Belligerents.	Expenditure. Million £.	Millions per Annum.	Loss in Men.
1793-1815	England and France	1,250	60	1,900,000
1828	Russia and Turkey	20	20	120,000
1830-40	Spain and Portugal (civil)	50	5	160,000
1830-47	France and Algeria	38	2	110,000
1848	Europe (civil)	10	10	60,000
1854-56	England, France, Russia	305	146	485,000
1859	France and Austria	45	45	63,000
1863-65	United States (civil)	740	350	656,000
1866	Prussia and Austria	20	20	51,000
1866	France and Mexico	15	15	65,000
1864-70	Brazil and Paraguay	48	8	330,000
1870-71	France and Germany	316	316	290,000
1876-77	Russia and Turkey	190	190	180,000
		3,047	36	4,470,000

Summary.

Period.	Expenditure Million £.	Loss of Life.	Per Annum. Million £.	Loss of Life.
1790-1820	1,250	1,900,000	42	63,000
1821-1850	118	450,000	4	15,000
1851-1860	350	548,000	35	55,000
1861-1880	1,329	1,572,000	66	79,000
	3,047	4,470,000	33	50,000

Digitized by Google

B.—British Wars.

Date.	Locality.	Expenditure. Millions £.	Per Inhab.	Commander.
1599 . .	Ireland . . .	4	£1	Essex.
1642–48 .	England and Ireland	57	11	Cromwell.
1688–97 .	Ireland and Holland	33	6	William III.
1702–63 .	Germany, Spain, &c.	182	24	Marlborough, &c.
1759 . .	Canada . . .	62	8	Wolfe.
1775–80 .	United States . .	121	13	Cornwallis.
1793–1815	France, &c. . .	831	55	Wellington.
1854–56 .	Crimea . . .	69	2	Raglan.
		1,359		

C.—French Wars.

Date.	Reign.	Locality.	Expenditure, Millions £.	Commander.
1654–1713 .	Louis XIV. .	Flanders, &c. .	154	Turenne, &c.
1733–63 . .	Louis XV. .	,, .	82	Saxe.
1778–83 . .	Louis XVI. .	United States .	22	Lafayette.
1791–1815 .	Napoleon . .	Europe, &c. . .	255	Buonaparte.
1830–47 . .	Louis Philippe	Algeria . . .	38	Bugeaud, &c.
1854–56 . .	Napoleon III. .	Crimea . . .	93	Pellissier.
1859 . . .	,, .	Italy	18	MacMahon.
1866 . . .	,, .	Mexico . . .	15	Bazaine.
1870–71 . .	,, .	Rhine	316	Lebeuf.

D.—Russian Wars.

Date.	Reign.	Locality.	Expenditure, Millions £.	Loss in Men.
1828	Nicholas . . .	Balkans . .	15	86,000
1854–56 . . .	,, . . .	Crimea . .	142	330,000
1876–77 . . .	Alexander II. . .	Turkey . .	133	110,000
1878–80 . . .	,, . .	Khiva, &c. .	45	21,000
		52 years	335	547,000

E.—War in the Crimea (1854–56).

	English.	French.	Turk.	Russian.	Total.
Took field . .	98,100	309,400	165,000	888,000	1,460,500
Killed in battle.	2,840	10,330	10,100	30,600	53,870
Died of wounds	2,700	11,100	10,800	42,000	66,600
Died of sickness	18,300	75,400	24,500	374,000	492,200
Returned home.	74,260	212,570	119,600	441,400	847,830

Shots Fired.

By	Millions.	Killed.	Shots to Kill.
English . .	15	21,000 Russians	700
French . .	29	51,000 ,,	590
Russians . .	45	48,000 Allies	910
Total . .	89	120,000 men	740

Digitized by Google

Hospital Report.

	Admitted.	Died.	Recovered.	Ratio. Died.	Ratio. Recovered.
British	102,060	21,010	81,050	20	80
French	436,100	86,480	349,620	20	80
Total	538,160	107,490	430,670	20	80

F.—American War (1863–65).

Northern Army.

	Officers.	White Men.	Coloured.	Total.	Ratio.
Took field	84,000	2,073,000	179,000	2,336,000	100
Killed	3,930	38,790	1,520	44,240	1·9
Died of wounds	2,070	30,890	1,046	34,006	1·5
,, sickness	1,720	121,110	26,200	149,030	6·4
Missing	1,600	60,910	4,614	67,124	2·9
Returned home	74,680	1,821,300	145,620	2,041,600	87·3

G.—Campaign of Sadowa (1866).

	Prussians.	Austrians.	Total.
Took field	309,000	330,000	639,000
Killed	2,650	11,100	13,750
Wounded	14,820	29,310	44,130
Missing	3,304	43,750	47,054
Hors-de-combat	20,774	84,160	104,934
Returned home	288,226	245,840	534,066

The Prussians had one officer killed or wounded for 21 men, the Austrians one for 18 men.

H.—Franco-German War (1870–71).

	French.	Germans.	Total.
Took field	420,000	780,000	1,200,000
Reinforced	290,000	223,000	513,000
Total	710,000	1,003,000	1,713,000
Killed	41,000	18,000	59,000
Died of wounds	36,000	11,000	47,000
,, sickness	45,000	12,000	57,000
Disabled	116,000	89,000	205,000
Prisoners	446,000	...	446,000
Hors-de-combat	684,000	130,000	814,000

Killed and Wounded.

	French.	German.	Total.
Woerth	32,000	11,000	43,000
Mars-le-tour	26,000	16,200	42,200
Gravelotte	28,500	20,100	48,600
Paris	30,000	13,300	43,300
Orleans, &c. &c.	76,500	57,400	133,900
Total	193,000	118,000	311,000

Digitized by Google

The Germans fired off 30 million musket cartridges and 363,000 rounds of artillery, with which they killed or mortally wounded 77,000 French, being 400 shots to kill, as compared with 740 in the Crimean war (q. v.). See *Battles*.

WATER.

1 cubic foot = 62½ lbs. or 6¼ gallons.
Do. sea-water = 64 lbs. or 6¼ gallons.
1 imperial gallon = 10 lbs. or 277 cubic inches.
224 gallons = 20 cwt. or 36 cubic feet.
A column of water, 12 inches high, 1 inch sq. = 434 lbs.
A similar column, 1 inch diameter = 341 lbs.
1 cylindrical foot = 4·9 gallons or 49 lbs.
An inch rainfall = 14½ million gallons per square mile.
8 cubic feet snow produces 1 cubic foot water.
Current requires minimum fall, one-10th of inch per mile.

WATER-POWER.

Niagara = 10 million cubic feet per minute, say 3 million horse-power nominal, or 9 million real.

Ticino (Italy), fall 530 feet, turbines 300 revolutions per minute, with static pressure 230 lbs. per square inch.

United States have 51,000 water-wheels, with 1½ million horse-power aggregate.

WATER-SUPPLY.

	Million Gallons Daily.	Gallons per Inhab.	Water per Ton, Pence.	Cost per Annum per Inhab.	Works, Cost, Thousands Omitted.
London . . .	145	38	2·10	12	£12,100
Paris	88	39	1·02	4	2,100
New York . .	88	70	...	...	2,500
Chicago . . .	60	120	0·45	7	...
Ancient Rome .	330	160	...	...	...
Modern ,, .	200	670	...	...	...
Glasgow . . .	26	48	...	...	1,550
St. Louis . . .	25	70	0·75	7	...
Marseilles . .	18	50	...	...	...
Buffalo	17	120	0·40	7	...
Manchester . .	11	20	...	...	1,320
Liverpool . .	11	20	...	...	1,650
Boston . . .	10	27	...	...	600
San Francisco .	10	42	1·60	22	...
Newark . . .	10	80	0·25	7	...
Edinburgh . .	10	33	...	...	510
Dublin . . .	7	22	...	...	610
Melbourne . .	7	25	...	...	1,600
Hamburg . .	5	12	...	...	170

Digitized by Google

A.—Wealth of Nations, in Millions £.

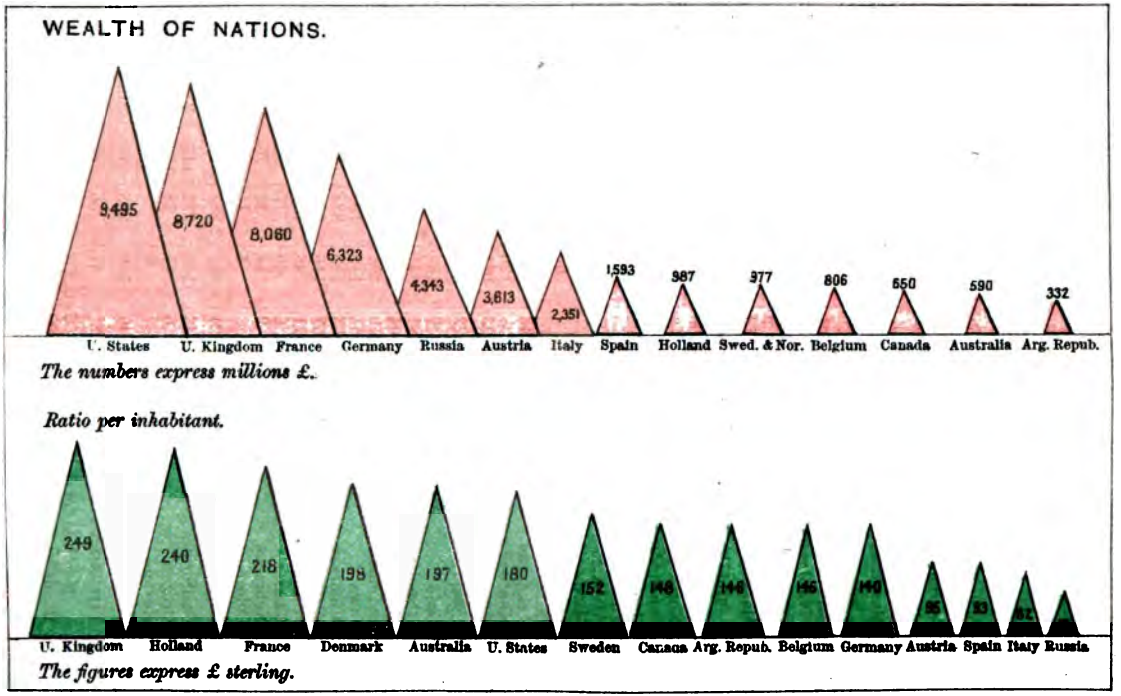
	Land and Forest.	Cattle.	Railways.	Public Works.	Houses.	Furniture.	Merchandise.	Bullion.	Shipping.	Sundries.	Total.
United Kingdom	1,880	235	770	547	2,280	1,140	350	143	120	1,255	8,720
France	2,930	212	494	590	1,890	945	165	301	15	518	8,060
Germany	2,420	231	467	442	1,470	735	155	108	15	280	6,323
Russia	1,940	345	309	224	880	440	60	34	7	104	4,343
Austria	1,590	205	255	188	770	385	64	20	4	132	3,613
Italy	905	56	108	131	656	328	48	45	9	65	2,351
Spain	740	57	79	60	340	170	22	41	7	77	1,593
Portugal	170	11	12	15	80	40	7	14	1	21	371
Belgium	270	30	61	41	140	70	58	29	2	105	806
Holland	220	33	27	125	116	58	61	17	4	326	987
Denmark	216	31	10	11	44	22	10	3	3	16	366
Sweden	444	42	26	32	62	31	14	4	5	35	695
Norway	173	21	6	13	24	12	7	1	13	12	282
Switzerland	110	21	33	30	70	35	10	7	...	8	324
Greece	112	6	...	7	44	22	4	6	2	8	211
Europe	14,120	1,536	2,657	2,456	8,866	4,433	1,035	773	207	2,962	39,045
United States	2,150	378	1,190	527	2,780	1,385	155	157	60	713	9,495
Canada	230	35	72	30	140	70	18	2	12	41	650
Mexico	125	32	12	12	240	120	20	10	...	67	638
Argentine Republic	122	54	16	6	72	36	12	1	...	13	332
Australia	192	66	58	28	108	54	52	14	4	14	590
Total	16,939	2,101	4,005	3,059	12,206	6,098	1,292	957	283	3,810	50,750

Digitized by Google

B.—Wealth of United States.

	Millions £.				Per Inhabitant, £.		
	1850.	1860.	1870.	1880.	1860.	1870.	1880.
Maine	26	39	72	90	60	110	143
New Hampshire	22	32	53	79	96	160	225
Vermont	19	25	49	72	77	147	216
Rhode Island	17	28	62	103	160	275	365
Connecticut	32	92	161	148	201	298	240
Massachusetts	119	169	443	495	135	303	272
New England	235	385	840	987	122	240	247
New York	224	384	1,352	1,726	99	304	338
New Jersey	42	98	196	191	147	215	170
Pennsylvania	150	295	792	1,188	101	226	280
Delaware	4	9	20	21	80	165	150
Maryland	46	79	134	158	115	168	168
Middle States	466	865	2,514	3,284	105	258	286
Virginia	89	166	125	130	105	75	61
North Carolina	47	75	54	77	75	50	55
South Carolina	60	114	44	41	163	62	41
Georgia	70	134	56	75	126	47	49
Florida	5	15	9	9	105	47	33
Alabama	48	103	42	56	107	42	44
Mississippi	48	127	44	43	159	52	40
Louisiana	49	125	67	61	180	91	64
Texas	11	76	33	106	126	40	66
Arkansas	8	46	32	35	104	65	44
Kentucky	63	138	126	133	120	96	80
Tennessee	42	103	104	117	92	83	78
The South	540	1,222	736	883	119	65	58
Ohio	105	249	465	651	107	174	206
Illinois	32	181	441	608	105	173	199
Missouri	28	104	267	281	88	155	128
Indiana	42	110	264	304	82	160	153
Iowa	5	51	149	198	77	122	123
Michigan	12	53	149	388	70	122	234
Wisconsin	9	57	146	205	71	139	156
Minnesota	...	11	48	127	66	109	152
Kansas	...	6	40	77	55	110	77
Nebraska	...	2	14	33	70	115	73
Colorado	...	...	4	15	...	98	76
The West	233	824	1,987	2,887	90	155	170
California	5	43	133	272	113	239	328
Oregon	1	6	11	18	120	122	105
Nevada	...	...	6	8	...	151	135
Pacific	6	49	150	298	116	215	270
Territories	6	21	47	56	82	103	72
Nominal total	1,486	3,366	6,274	8,395	107	160	166
Roads, lands, &c.	200	500	800	1,100	16	21	22
Total	1,686	3,866	7,074	9,495	123	181	188

Digitized by Google



Digitized by Google

Digitized by Google

C.—Ratio of American Wealth.

States.	1850.	1860.	1870.	1880.
New England . .	15·7	11·4	13·4	11·8
Middle . . .	31·1	25·6	40·0	39·1
South . . .	36·6	36·4	11·8	10·5
West . . .	15·8	24·5	31·7	34·4
Pacific . . .	0·8	2·1	3·1	4·2
Union . . .	100·0	100·0	100·0	100·0

D.—Components of American Wealth.

Millions £.

States.	Land.	Cattle.	Railways.	Houses.	Sundries.	Total.
New England . .	123	26	71	375	392	987
Middle . . .	510	82	325	1,291	1,076	3,284
South . . .	351	87	136	212	97	883
West . . .	1,092	171	596	832	196	2,887
Pacific . . .	74	12	62	70	80	298
Union . . .	2,150	378	1,190	2,780	1,841	8,339

E.—Australian Wealth.

	Millions £.			Per Inhabitant.		
	1860.	1870.	1882.	1860.	1870.	1882.
Lands	52	89	192	£41	£45	£64
Cattle	29	47	66	23	24	22
Railways	7	27	58	6	14	19
Houses and furniture .	53	90	162	42	45	54
Merchandise, &c. . .	49	67	112	39	34	39
Total	190	320	590	£151	£162	£198

	Millions £, 1882.						Per Inhab.
	Land.	Cattle.	Houses, &c.	Railways.	Sundries.	Total.	
New South Wales	63	25	51	16	35	190	£241
Victoria . . .	55	11	57	17	38	178	198
New Zealand. .	36	9	28	11	18	102	205
South Australia .	25	5	13	5	11	59	197
Queensland . .	7	13	8	6	6	40	176
Tasmania . . .	5	2	4	2	3	16	130
West Australia .	1	1	1	1	1	5	148
Total . . .	192	66	162	58	112	590	£198

Digitized by Google

F.—Growth of British Wealth.

Year.	Millions £.				Per Inhab.	Kingdom.
	Lands.	Houses.	Sundries.	Total.		
1660 . .	144	46	60	250	£45	England.
1703 . .	270	87	133	490	79	,,
1774 . .	568	184	348	1,100	136	,,
1800 . .	820	240	680	1,740	165	G. Britain.
1812 . .	1,066	355	769	2,190	127	U. Kingdom.
1840 . .	1,680	770	1,580	4,030	150	,,
1860 . .	1,840	1,164	2,556	5,560	191	,,
1882 . .	1,880	2,280	4,560	8,720	249	,,

	Millions £.				Aliquot Parts.			
	1812.	1840.	1860.	1882.	1812.	1840.	1860.	1882.
Land . . .	1,066	1,680	1,840	1,880	48·7	41·7	33·1	21·5
Cattle, &c. .	260	380	460	414	11·9	9·4	8·3	4·7
Houses . .	355	770	1,164	2,280	16·2	19·1	20·9	26·1
Railways .	...	33	348	770	...	0·8	6·3	8·8
Shipping .	15	23	44	120	0·7	0·6	0·8	1·4
Merchandise	50	70	190	350	2·3	1·7	3·4	4·0
Furniture .	180	390	580	1,140	8·2	9·7	10·4	13·1
Bullion . .	23	61	105	143	1·0	1·5	1·9	1·6
Loans . . .	105	230	420	1,060	4·8	5·7	7·5	12·2
Sundries . .	136	393	409	563	6·2	9·8	7·4	6·6
Total . .	2,190	4,030	5,560	8,720	100·0	100·0	100·0	100·0

G.—Distribution of British Wealth.

	Millions £ in 1801.				Millions £ in 1882.			
	England.	Scotland.	Ireland.	U. Kingdom.	England.	Scotland.	Ireland.	U. Kingdom.
Lands . .	718	102	170	990	1,403	207	270	1,880
Cattle . .	80	10	15	105	143	40	52	235
Houses .	240	30	36	306	2,007	213	60	2,280
Furniture	120	15	18	153	1,004	106	30	1,140
Railways .	...	...	...	...	636	98	35	769
Sundries .	366	53	57	476	1,985	326	105	2,416
Total .	1,524	210	296	2,030	7,178	990	552	8,720

The wealth ratios of the three kingdoms appears thus :—

Authority.	England.	Scotland.	Ireland.	U. Kingdom.	Date.
Legacy tables .	82·3	12.2	5·5	100·0	1877
Income-tax . .	84·2	9·6	6·2	100·0	1880
Mulhall . .	82·3	11·4	6·3	100·0	1882
General average .	82·9	11·1	6·0	100·0	...

Digitized by Google

H.—Wealth and Income Compared.

	Million £.		Per Inhabitant.		Income on Cap., Per-centage.	Annual Savings.	
	Wealth.	Income.	Wealth.	Income.		Million £.	Per Inhab.
U. Kingdom .	8,720	1,247	£248	£35	14·3	154	84s.
France . .	8,060	965	218	26	12·0	140	73
Germany .	6,323	850	140	19	13·5	40	18
Russia . .	4,343	760	53	9	17·5	10	2
Austria . .	3,613	602	95	16	16·7	40	22
Italy . .	2,351	292	82	11	12·4	10	7
Spain . .	1,593	188	93	12	11·7	8	9
Portugal . .	371	45	90	11	12·2	2	8
Belgium . .	806	120	145	22	14·9	11	40
Holland . .	987	104	240	26	10·5	9	42
Denmark .	366	47	198	24	12·8	3	30
Swed. and Nor.	977	104	152	16	10·6	7	22
Switzerland .	324	44	126	16	13·5	5	36
Greece . .	211	23	116	12	11·0	1	19
Europe . .	39,045	5,391	126	18	13·8	440	27
United States .	9,495	1,420	180	27	14·9	210	77
Canada . .	650	118	148	27	18·1	15	63
Mexico . .	638	104	65	11	11·0	...	...
Arg. Republic	332	61	146	27	18·4	5	38
Australia .	590	133	197	44	22·6	22	135
Total . .	50,750	7,227	137	19	14·2	692	35

I.—Wealth, Debt, and Taxation Compared.

	Millions £.			Ratio.		
	Wealth.	Debt.	Taxation.	Wealth.	Debt.	Taxation.
U. Kingdom .	8,720	763	124	100	8·75	1·43
France. . .	8,060	911	145	100	11·30	1·80
Germany . .	6,323	229	104	100	3·63	1·65
Russia . . .	4,343	553	85	100	12·70	1·96
Austria . .	3,613	419	74	100	11·64	2·05
Italy . . .	2,351	522	74	100	22·22	3·15
Spain . . .	1,593	390	41	100	24·53	2·56
Portugal . .	371	94	8	100	25·40	2·16
Belgium . .	806	62	14	100	7·70	1·74
Holland . .	987	80	10	100	8·08	1·01
Denmark . .	366	10	4	100	2·80	1·09
Swed. & Nor.	977	20	10	100	2·04	1·02
Greece. . .	211	18	3	100	8·60	1·43
Europe . .	38,721	4,071	696	100	10·52	1·80
United States	9,495	333	160	100	3·49	1·68
Total . .	48,216	4,404	856	100	9·14	1·78

Digitized by Google

In the table of Wealth, Debt, and Taxation on the preceding page, the debt does not include local debts, but the taxation includes all taxes, rates, and revenues, national and local.

WEIGHTS AND MEASURES.

A.

Acre, 4,840 square yards.
Almud, Turkish, 1·14 gallons.
,, Portuguese, 3·74 gallons.
Amphora, Roman, 7 gallons.
Ardeb, Egyptian, 280 lbs.
Arpent, 0·85 acre.
Arroba, 25 lbs., 3½ gallons.
Bale, American, 485 lbs.
,, Brazilian, 156 ,,
,, Egyptian, 600 ,,
,, Indian, 376 ,,
Barrel, 36 gallons.
,, American, 30 gallons.
,, Dutch, 41 ,,
,, French, 32 ,,
,, German, 39 ,,
,, flour, pork, 200 lbs.
,, apples, 150 lbs.
,, fish, 1000 number.
Bonnier, French, 3 acres.
Bushel, barley, 54 lbs.
,, oats, 40 ,,
,, rye, 59 ,,
,, wheat, 61½ ,,
Catty, 3 = 4 lbs.
Chetvert, 5½ bushels.
Cord, wood, 125 cubic feet, 2½ t.
Cuartillo, 9 = 1 gallon.
Cubit, 18 inches.
Dessiatine, 10 = 27 acres.
Eimer, 12 gallons.
Fanega, 4 bushels.
Fanegada, 10 = 16 acres.
Fathom, 6 feet.
Foot, cubic, 52 = 1 ton.
,, ,, water, 62 lbs., 6¼ gals.
Furlong, 220 yards.
Gallon, 277 cub. inches, 10 lbs. water.
Grammes, 453 = 1 lb.
Hectare, 2·47 acres.
Hectolitre, 22 gallons, 2¾ bushels.
Hogshead, 63 gallons.
Joch, 1·43 acre.
Kanna, 100 Swedish = 58 gallons.
,, 100 German = 44 ,,
Kilogram, 2·20 lbs.
Kilometer, 100 = 62 miles.
Klafter, 2 tons wood.
Knot, 2000 yards.
Last, German, 2 tons.
,, Norwegian, 3½ tons.
League, Dutch, 6,380 yards.
,, Spanish, 6,160 ,,
Litre, 100 = 1 hectolitre.
Load, bricks, 500.
,, corn, 40 bushels.
,, hay, 20 cwt.
,, straw, 10 cwt.
,, wood, 50 cubic feet.
Maund, Indian, 80 lbs.
Metre, 3·28 feet.
Metzen, 3 = 5 bushels.
Mile, 1760 yards.
,, German, 8,140 yards.
,, Swedish, 11,770 ,,
,, Turkish, 1,870 ,,
Morgen, 5 = 3 acres.
Oke, 4 = 11 lbs.
Palm, 3 inches.
Parasang, 4 miles.
Peck, ¼ bushel.
Perch, 5½ yards.
Picul, 133 lbs.
Pint, 8 = 1 gallon.
Pipe, 126 gallons.
Pood, 36 lbs.
Pott, Norwegian, 100 = 21 gallons.
Pound, 16 ounces.
,, Roman, 12 ounces.
Quarter, 8 bushels.
Quintal, 110 lbs.
,, metrical, 220 lbs.
Salma, 4½ acres.
Scheffel, 1·45 bushel.
Septier, 4 = 17 bushels.
Sextarius, 1¼ pint.
Span, 9 inches.
Stadium, 120 yards.
Stère, 35 cubic feet wood.
Stoup, ½ gallon.
Toise, 6½ feet.
Ton, 2240 lbs.
,, American, 2000 lbs.
Tunnland, 1¼ acre.
Tunna, 4 bushels.
Vedro, 10 = 27 gallons.
Verst, 100 = 66 miles.

Digitized by Google

B.—Grain.

	Cubic Feet.	Bushel.	Quarter.	Hecto-litre.	Scheffel.	Metzen.	Chetvert.
Cubic metre	35·3	27·60	3·45	10·00	19·30	16·50	5·00
Bushel .	1·3	1·00	0·12	0·36	0·70	0·60	0·18
Quarter .	10·4	8·00	1·00	2·90	5·60	4·80	1·44
Ton . .	52·0	40·00	5·00	14·50	28·00	24·00	7·20
Hectolitre .	3·5	2·76	0·35	1·00	1·93	1·65	0·50
Scheffel .	1·9	1·45	0·18	0·53	1·00	0·86	0·26
Metzen .	2·2	1·66	0·21	0·60	1·16	1·00	0·30
Chetvert .	7·0	5·55	0·70	2·00	3·90	3·30	1·00

C.—Length.

	Knot.	Mile.	Kilom.	Verst.		Knot.	Mile.	Kilom.	Verst.
Mile .	0·88	1·00	1·61	1·50	Kilom.	0·55	0·62	1·00	0·93
Knot .	1·00	1·14	1·83	1·71	Verst.	0·58	0·66	1·07	1·00

D.—Liquids.

	Lbs.	Cubic Feet.	Litre.	Hecto-litre.	Eimer.	Barrel.	Hogs-head.
Galloh . .	10	0·14	4·5	0·045	0·080	0·027	0·016
Litre . .	2·2	0·03	1·0	0·010	0·018	0·006	0·004
Hectolitre .	220	3·10	100	1·000	1·760	0·600	0·350
Eimer . .	124	1·75	56	0·560	1·000	0·340	0·200
Barrel . .	360	5·00	160	1·600	2·880	1·000	0·576
Hogshead .	630	8·80	284	2·835	5·000	1·710	1·000

E.—Sundries.

	Lbs.	Cwt.	French Ton.	American Ton.	Kilog.	Pood.	Picul.
English ton .	2,240	20·00	1·018	1·120	1,018	62·20	16·80
Cwt.	112	1·00	0·051	0·056	51	3·11	0·84
Quintal . . .	110	0·98	0·050	0·055	50	3·05	0·82
French ton .	2,204	19·64	1·000	1·100	1,000	61·00	16·50
American ton .	2,000	17·86	0·910	1·000	910	56·40	15·00
Kilogram . .	2·20	00·02	0·001	0·001	1·0	0·06	0·016
Pood	36	0·32	0·017	0·018	16·3	1·00	0·27
Picul	133	1·20	0·061	0·067	60·0	3·67	1·00

F.—Superficial.

	Sq. Yds.	Acre.	Morgen.	Hectare.	Dessia-tine.	Sq. Kilom.	Sq. Mile.
Acre	4,840	1·00	1·56	0·405	0·367	0·0040	0·0016
Morgen . . .	3,122	0·65	1·00	0·260	0·235	0·0026	0·0010
Joch	6,914	1·43	2·23	0·576	0·520	0·0057	0·0022
Hectare . .	12,000	2·47	3·84	1·000	0·910	0·0100	0·0039
Dessiatine . .	13,100	2·70	4·20	1·093	1·000	0·0091	0·0035
Sq. kilom. .	1,190,000	250	390	100	91	1·0000	0·3900
Sq. mile .	3,097,600	640	1,000	260	235	2·60	1·0

G.—Old English Measures.

Name.	Date.	Wine gallon, cubic inches.	Beer gallon, cubic inches.	Corn gallon, cubic inches.	Bushel, cubic inches.
Magna Charta	1225	217	266	266	2,130
Edward III. .	1353	219	268	268	2,148
Henry VII. .	1496	224	280	280	2,240
Henry VIII. .	1531	231	282	282	2,256

Digitized by Google

WHEAT.

A.—Production and Consumption.

	Millions of Bushels.				Consumption, per Inhab. Lbs.
	Crop.	Consumption.	Surplus.	Deficit.	
United Kingdom .	76	206	...	130	330
France . . .	270	320	...	50	455
Germany . . .	100	140	...	40	166
Russia . . .	210	160	50	...	120
Austria . . .	115	105	10	...	160
Italy . . .	140	145	...	5	282
Spain and Portugal .	140	135	5	...	360
Belgium and Holland	24	54	...	30	280
Scandinavia . .	7	12	...	5	80
Turkey, &c. . .	85	70	15	...	340
Europe . .	1,167	1,347	...	180	235
United States . .	440	290	150	...	305
Canada . . .	46	36	10	...	370
Australia . .	35	20	15	...	380
India . . .	270	240	30	...	60
Egypt . . .	15	10	5	...	110
Various . . .	40	70	...	30	...
Total . .	2,013	2,013	...	...	...

For acreage, see *Grain*.

B.—Prices in England (580 Years).

Period.	Shillings per Quarter, 8 Bushels.			Years.	
	Average.	Maximum.	Minimum.	Highest.	Lowest.
1301–50 . . .	18	48	10	1316	1338
1351–1400 . .	16	32	9	1369	1392
1401–50 . . .	15	62	6	1434	1404
1451–1500 . .	10	35	4	1497	1454
1501–50 . . .	20	38	6	1521	1509
1551–1600 . .	22	63	15	1597	1568
1601–50 . . .	42	80	27	1648	1604
1651–1700 . .	47	70	24	1662	1687
1701–50 . . .	39	74	23	1709	1744
1751–1800 . .	66	83	27	1796	1781
1801–50 . . .	61	114	39	1812	1835
1851–81 . . .	51	64	39	1867	1851

The above prices are according to weight of silver.

Digitized by Google

C.—Nominal Prices in France.

Pence per English Bushel.

Period.	Pence.	Period.	Pence.	Period.	Pence.
1250–1300	4	1551–1600	17	1751–1800	51
1301–1400	6	1601–1650	39	1801–1820	70
1401–1500	8	1651–1700	22	1821–1850	67
1501–1550	5	1701–1750	36	1851–1880	77

D.—All World Prices (60 Years).

Pence per English Bushel.

	1821–30.	1831–40.	1841–50.	1851–60.	1861–70.	1871–80.
Great Britain	90	84	80	82	78	71
France	65	67	69	78	75	79
Germany	49	46	56	70	68	82
Austria	39	35	45	68	78	70
Russia	47	44	42	65	68	67
Europe	58	55	58	72	73	74
United States	60	68	58	79	75	65

E.—Wheat Supply of United Kingdom.

Period.	Annual Consumption, Million Bushels. British.	Imported.	Total.	Price, Shillings per Quarter.	Consumption, Lbs. per Inhab.
1811–30	94	3	97	74	258
1831–50	102	16	118	55	255
1851–60	103	47	150	54	301
1861–70	102	73	175	52	321
1871–80	77	114	191	48	325
1881	72	135	207	46	330

F.—Importation into United Kingdom (Annual).

From	Millions of Bushels. 1861-70.	1871–80.	1881.	Ratio. 1861-70.	1871–80.	1881.
America	22	55	85	30	48	63
Russia	19	23	10	26	20	7
India, &c.	32	36	40	44	32	30
Total	73	114	135	100	100	100

G.—Average Yield in United Kingdom.

Period.	Acres.	Million Bushels.	Bushels per Acre.
1850–60	3,754,000	110	29·3
1861–70	3,770,000	109	28·9
1871–80	3,470,000	84	24·2
1881	3,070,000	79	26·0

Deducting 2 bushels per acre for seed, the rest was available for food.

Digitized by Google

WIDOWED.

	Percentage in Population.			Percentage in Marriages.	
	Widows among Females.	Widowers among Males.	Both, General Average.	Widows as wives.	Widowers as husbands.
England . .	7	4	5·3	9	14
France . . .	11	6	8·4	8	12
Germany . .	8	4	5·8	9	15
Austria . .	7	3	5·3	11	18
Italy . . .	9	4	6·6	8	14
Spain . . .	9	5	6·8	11	17
Switzerland . .	9	5	7·2	7	12
Belgium . .	7	4	5·6	8	13
Holland . .	8	4	6·1	9	16
Scandinavia .	7	4	5·2	6	11
Average . .	8	4	5·8	8	14

WILD BEASTS.

A.—In France 1225 wolves were killed in 1882, for which the Government paid £6000. Game licences, 347,000 per annum.

B.—Game licences in Germany, 146,000; slaughter, 20,000 foxes, 30,000 deer, 2,000,000 hares, 3,000,000 partridges.

C.—Annual "Battue" in Sweden.

	1827-36.	1850-59.	1867-76.
Bears	135	118	110
Lynxes . . .	243	140	91
Wolves . . .	542	162	53
Foxes	7,882	5,396	...

D.—The Russian forests contained in 1880 over 170,000 wolves, which devoured 200 children or travellers per annum.

E.—Austrian Large Game Killed per Annum.

Bears	160	Wolves	1,200
Lynxes	200	Foxes	8,000

Besides 3000 tiger-cats and various other kinds.

F.—In Java there are 270 persons killed by tigers and 180 by crocodiles yearly.

G.—In India 21,000 persons and 53,000 cattle are killed yearly by tigers, snakes, &c. The Indian Government pays

Digitized by Google

£10,000 per annum for killing 20,000 wild beasts and 120,000 snakes.

H.—In Cochin-China the French killed in 1882 no fewer than 109 tigers and 25 panthers.

WIND.

A.—Velocity and Pressure.

Feet per Second.	Miles per Hour.	Pressure, Lbs. per Sq. Foot.	Feet per Second.	Miles per Hour.	Pressure, Lbs. per Sq. Foot.
5	3½	1 oz.	80	54	16 lbs.
10	7	4 oz.	90	61	20¼ „
20	14	1 lb.	100	68	25 „
30	20	2¼ lbs.	110	75	30¼ „
40	27	4 „	120	82	36 „
50	34	6¼ „	130	88	42¼ „
60	41	9 „	140	95	49 „
70	48	12¼ „	150	102	56 „

The average pressure in England is 257 miles daily, or 10½ per hour, say, 15 feet per second, equal to 10 oz. per sq. foot.

B.—Mean Velocity at Plymouth (1841–42).

Feet per Second.

January . .	12·76	May . .	11·60	September .	15·42
February . .	13·97	June . .	10·90	October . .	15·29
March . . .	14·63	July . .	9·00	November .	14·96
April . . .	13.00	August . .	12·87	December .	12·54

1st Quarter . . .	13·80	3d Quarter . . .	12·40
2d „ . . .	11·80	4th „ . . .	14·30

C.—Mean Amount of Wind, Plymouth 1841–43.

Wind.	Spring.	Summer.	Autumn.	Winter.	Total.
N.E. . .	143	2	...	133	278
E.N.E. . .	134	13	102	134	383
E. . . .	321	124	130	25	600
S.E. . . .	...	...	...	6	6
S.S.E. . .	19	...	3	7	29
S. . . .	657	86	798	545	2,086
S.S.W. . .	725	689	476	275	2,165
S.W. . . .	...	...	34	...	34
W.N.W. . .	50	65	128	99	342
N W. . .	59	46	17	...	122
N.N.W. . .	...	58	...	...	58
Total . .	2,108	1,083	1,688	1,224	6,103

Digitized by Google

D.—London Winds, 1813–30.

	Days.			
	N. to E.	E. to S.	S. to W.	W. to N.
January	6·0	5·6	7·1	10·0
February	4·2	5·0	7·8	9·5
March	5·8	4·9	8·3	10·5
April	6·5	6·5	6·4	9·2
May	7·9	6·8	6·8	7·9
June	7·2	4·3	6·7	10·5
July	4·4	3·6	8·8	12·6
August	5·2	3·5	8·6	13·0
September	6·3	5·5	8·8	8·3
October	5·5	6·6	8·4	9·5
November	4·5	4·4	9·3	10·7
December	5·4	5·5	9·5	9·3
Total	68·9	62·2	106·5	121·0

WINDMILLS.—Holland has 10,100 windmills, representing a value of 20 millions sterling, with an aggregate force of 52,200 horse-power. Cost of drainage, 10 pence per acre, with a lift of 3 feet; 20 pence at 6 feet, and so on. The average area drained by each mill in Holland is 310 acres, each lifting 150,000 tons or 33 million gallons water daily. See *Pumps*.

WINDOWS.

A.—Great Britain (without Ireland).

Year.	Thousands Omitted.			Windows per	
	Windows.	Houses.	Population.	House.	Inhabitant.
1801	10,300	1,781	10,501	5·8	0·98
1850	21,900	3,648	20,960	6·0	1·05
1882	46,100	5,475	30,720	8·4	1·51

B.—Window Duty in Great Britain in 1850.

Windows.	Houses.			Duty per Annum, £.		
	England.	Scotland	Great Britain.	England.	Scotland.	Great Britain.
8 to 10	156,000	15,000	171,000	167,000	15,000	182,000
11 to 20	216,000	15,000	231,000	687,000	48,000	735,000
21 to 30	48,000	4,000	52,000	366,000	25,000	391,000
Over 30	30,000	1,600	31,600	404,000	37,000	441,000
Total	450,000	35,600	485,600	1,624,000	125,000	1,749,000

Digitized by Google

C.—Window Duty in English Towns (1850).

	Amount.	Shillings per House.		Amount.	Shillings per House.
Liverpool .	£33,000	58	Bristol . .	£15,000	64
Manchester .	22,000	55	Plymouth .	12,000	54
Bath . .	22,000	118	Newcastle .	8,500	61
Brighton .	18,000	101	Leeds . .	8,100	65
Birmingham	16,000	59	Norwich .	7,000	78

The ratio per house is only on the number of houses taxed.

D.—Windows in France.

Year.	Thousands Omitted.			Windows per	
	Houses.	Windows.	Population.	House.	Inhabitant.
1826	6,484	28,580	31,120	4·4	0·92
1836	6,805	30,144	33,410	4·5	0·90
1846	7,146	35,211	35,160	4·9	1·00
1856	7,633	38,446	36,540	5·0	1·05
1866	7,811	43,115	38,330	5·5	1·12
1882	8,813	49,394	37,672	5·6	1·31

WINE.

A.—Production.

	Acres, Thousands Omitted.	Millions Gallons.	Value, Millions £.	Gallons per Acre.
France . .	5,150	720	45	140
Italy . .	4,650	580	30	125
Spain . .	2,720	320	19	118
Portugal . .	420	80	10	190
Austria . .	1,580	310	15	196
Germany . .	305	70	4	230
Russia . .	110	19	2	170
Europe . .	14,935	2,099	125	133
United States .	130	21	2	160
Algeria . .	51	9	1	176
South Africa .	18	4	2	220
Australia . .	15	2		130
Argentine Republic	13	2		160
Various . .	60	9		150
Total . .	15,222	2,146	130	140

The production is declining in Europe, but increasing in Algeria, United States, and Argentine Republic. Good artificial wine is made in France, 10 degrees alcohol.

Digitized by Google

B.—Consumption.

	Million Gallons.	Gallons per Inhab.		Million Gallons.	Gallons per Inhab.
U. Kingdom	15	0·44	Italy	480	17·40
France	780	21·00	Spain	220	13·60
Germany	120	2·70	Portugal	60	13·30
Russia	24	0·30	United States	27	0·51
Austria	300	7·90	Various	120	...

Rudesheimer is worth £20 a gallon. Prince Woronzoff sells his Tokay, 220 years old, at £9 a bottle. Champagne vintage averages 20 million bottles, of which France exports 17 millions. The Xerez vineyards, 15,000 acres, produce 4 million gallons yearly of sherry. Wine loses strength after 200 years.

C.—French Vintage and Wine Trade.

Annual Average.

Period.	Acres, Thousands Omitted.	Vintage, Million Gallons.	Import, Million Gallons.	Export, Million Gallons.	Consump. Gallons per Inhab.	Price, Pence per Gallon.
1810–12	4,064	455	...	8	16	14
1830–32	5,015	502	...	18	16	17
1840–42	5,230	790	...	24	23	16
1850–52	5,450	920	...	38	25	21
1860–62	5,510	703	...	48	18	23
1870–72	6,560	1,010	...	70	25	20
1880–82	5,150	720	140	55	21	27

D.—Consumption in United Kingdom.

Year.	Gallons, Thousands Omitted.	Duty, Shillings per Gallon.	Consumption, Gallons per Inhabitant.
1801	6,877	10	0·45
1811	5,630	14	0·32
1821	4,702	14	0·23
1831	6,220	6	0·26
1841	6,185	6	0·22
1851	6,282	6	0·23
1861	10,693	1	0·36
1871	16,145	1	0·53
1881	15,550	1	0·44

WOOD.—See *Timber*.

Digitized by Google

WOOL.

A.—Annual Clip (1880).

	Wool, Million Lbs.	Sheep, Millions.	Lbs. Wool per Sheep.	Value of Clip, Millions £.	Value of Fleece, Pence.
United Kingdom	112	28	4·0	6·8	59
France	88	23	3·8	5·3	56
Germany	80	25	3·2	4·8	46
Russia	180	49	3·7	10·0	49
Austria	65	21	3·1	3·6	40
Italy	21	7	3·0	1·2	41
Spain and Portugal	82	25	3·3	4·9	46
Belgium, Holland, &c.	47	15	3·1	2·8	45
Europe	665	193	3·4	39·0	49
United States	210	41	5·0	11·7	70
River Plate	260	76	3·4	6·4	20
Canada	12	3	4·0	0·7	54
Australia	390	66	5·9	19·5	72
Cape Colony	52	11	4·7	2·8	60
India	26	8	3·3	1·5	45
Algeria	32	9	3·6	1·7	47
Total	1,647	407	4·1	83·3	50

B.—Increase of Wool-crop.

Millions of Lbs., Annual Clip.

Year.	Europe.	U. States.	R. Plate.	Cape.	Australia.	Total.
1800	420	8	1	...	...	429
1830	490	18	6	2	3	519
1840	510	52	15	10	14	601
1850	630	90	25	18	43	806
1860	715	112	56	28	70	981
1870	807	154	167	46	197	1,371
1880	665	210	260	52	390	1,577

This does not include Canada, India, &c. See Table A.

C.—Messrs Bowes's Tables.

Annual Clip, Millions of Lbs.

	Unwashed.			Equivalent Washed.		
	1860.	1874.	1882.	1860.	1874.	1882.
Australia	60	222	352	35	124	197
Cape	26	49	54	15	34	38
River Plate	40	207	240	15	72	84
Total	126	478	646	65	230	319

The figures for 1860 are too low, the shipments from Australia that year exceeding 69 million lbs.

Digitized by Google

D.—Consumption in Manufacture (1880).

	Million Lbs.	Lbs. per Inhab.	Manufactures, Thousands Omitted.		
			Exported.	Home Use.	Total.
United Kingdom .	338	9·8	£20,600	£25,500	£46,100
France . . .	336	8·8	13,600	29,700	43,300
Germany . .	190	4·2	7,500	18,800	26,300
Russia . . .	170	2·2	...	23,000	23,000
Austria . .	80	2·1	1,100	9,600	10,700
Italy . . .	33	1·3	...	4,800	4,800
Spain and Portugal	70	3·4	...	8,500	8,500
Belgium . .	93	20·5	3,300	4,500	7,800
Other countries .	20	...	...	2,100	2,100
Europe . .	1,330	4·2	£46,100	£124,500	£170,500
United States .	320	6·6	...	43,000	43,000
Total . .	1,650	4·5	£46,100	£169,500	£213,500

One pound of washed wool produces a yard of cloth.

E.—Consumption of Woollen Manufactures.

	Millions £.	Per Inhab., Shillings.		Millions £.	Per Inhab., Shillings.
U. Kingdom . .	26	15	Spain and Port.	9	9
France	30	16	Belgium . . .	4	15
Germany . . .	19	9	Holland . . .	3	15
Russia	23	6	Scandinavia .	6	14
Austria . . .	10	6	United States .	50	19
Italy	5	4	Colonies, &c. .	28	...

F.—Woollen Industry in Great Britain.

Year.	Wool Consumed, Million Lbs.			Value of Manufactures, Millions £.		
	British.	Foreign.	Total.	Exported.	Home Use.	Total.
1780 .	60	5	65	2·6	9·2	11·8
1800 .	70	9	79	6·9	8·8	15·7
1820 .	75	10	85	5·6	14·2	19·8
1830 .	80	30	110	4·8	17·8	22·6
1840 .	85	44	129	5·8	20·7	26·5
1850 .	110	48	158	10·1	19·6	29·7
1860 .	120	104	224	16·0	21·5	37·5
1870 .	138	171	309	31·4	23·3	54·7
1880 .	112	226	338	20·6	25·5	46·1

Digitized by Google

WORK.

FOOT-TONS OF ENERGY.

Walking 1 mile . . .	171½	Dock-labourer's	325
„ 4 miles . . .	70	Pile-driving	332
Carrying 60 lbs. 1 mile .	25	Pavior	352
„ „ 4 miles	100	Turning a winch . . .	374
Pedlar's day's work . .	303	Man's ordinary work . .	300
Convict's „ . .	310	Very hard do.	400

WORKERS, FEMALE.—In the United States in 1880 there were women workers as follows:—

Artists . . .	2,061	Journalists . .	288	Preachers . .	165
Authors . .	320	Lawyers . . .	75	Printers . . .	3,456
Barbers . . .	2,902	Musicians .	13,181	Tailors . .	52,098
Dressmakers	281,928	Physicians .	2,432	Teachers . .	154,375

WORKMEN.

A.—TEXTILE FACTORIES.

	English.	French.	German.
Weekly wages	17s.	12s.	10s.
Cost weaving 100 yards	26d.	40d.	32d.
Factories, per 10,000 spindles per week	£41	£59	£52

B.—VALUE OF FARM-LABOURER, ÆT. 25.

Country.	Value.	Valuer.
England	£246	Farr.
Germany	200	Engel.
United States . . .	166	Immig. report.
Australia	260	„

There are supposed to be 300,000 able-bodied men unoccupied in Ireland, representing an unproductive capital value of 60 millions sterling. In Spain 800,000, representing an available value of 150 millions sterling.

WRECKS.

A.—TONNAGE LOST YEARLY.

	Steam.	Sailing.	Total.	Ratio to Shipping, Per Cent.
British	90,000	170,000	260,000	3·50
French	7,000	22,000	29,000	3·60
German . . .	6,000	40,000	46,000	3·80
Russian . . .	3,000	18,000	21,000	4·00
Austrian . . .	3,000	9,000	12,000	4·00
Italian	1,500	27,500	29,000	2·90
Spanish . . .	3,500	13,500	17,000	3·70
Dutch	3,000	14,000	17,000	4·05
United States .	16,000	112,000	128,000	4·90
Various . . .	59,000	130,000	189,000	4·00
Total . . .	192,000	556,000	748,000	3·80

Digitized by Google

B.—Lloyd's Register.

	Average, 1866–79.	Year 1880.
Vessels missing	93	101
Sunk by collision	182	205
Burnt	191	229
Stranded	1,171	1,108
Waterlogged, &c.	534	550
Total	2,171	2,193

C.—Loss of Value and Life by Shipwrecks (per Annum).

Flag.	Ships and Cargoes, Thousands Omitted.	Lives Lost.
British	£18,900	2,090
French	2,100	250
German	3,400	400
Russian	1,500	200
Austrian	800	110
Italian	2,050	250
Spanish	1,200	150
Dutch	1,200	150
United States	9,400	1,100
Various	6,300	700
Total	£46,850	5,400

The total value of shipping and merchandise sent over the sea annually is almost 1400 millions sterling, and the loss is about 3¼ per cent., or less than 1 per cent. per voyage.

Y

YACHTS.—The increase of yachting in Great Britain in 30 years has been as follows:—

Year.	Clubs.	Yachts.	Year.	Clubs.	Yachts.
1853	18	1,046	1873	40	2,805
1863	18	1,348	1883	55	4,030

France has 9370 yachts, averaging 3 tons, and £61 in value: of the whole number only 103 are steamers.

Digitized by Google

A.—Log of the "Sunbeam."

Month.	Miles.			Between	
	Steam.	Sail.	Total.	Latitude.	Longitude.
July 1876 .	672	1,967	2,639	48 N.—14 N.	4 W.— 25 W.
August . .	569	2,635	3,204	14 „ —24 S.	18 „ — 43 „
September .	711	1,011	1,722	24 S.—41 „	43 „ — 60 „
October . .	1,753	806	2,559	54 „ —32 „	60 „ — 77 „
November .	632	4,169	4,801	32 „ —15 „	73 „ —146 „
December .	752	2,123	2,875	18 „ —21 N.	146 „ —157 „
Jan. 1877 .	664	3,852	4,516	16 N.—33 „	157 „ —137 E.
February .	985	1,013	1,998	33 „ —22 „	137 E. —116 „
March . .	2,070	1,251	3,321	22 „ — 2 „	116 „ — 81 „
April . .	3,262	551	3,813	7 „ —28 „	81 „ — 33 „
May . . .	2,395	934	3,329	28 „ —49 „	33 „ — 10 W.
Total . .	14,465	20,312	34,777	...	...

The average temperature of water was as follows:—

1876.		1876.		1877.		1877.	
July . .	73·2	October .	51·7	January .	76·8	April . .	82·3
August .	75·3	November	76·3	February	56·5	May . .	65·0
September	59·7	December	80·1	March .	79·4		

The "Sunbeam" had 43 souls aboard, including the Brassey family: she was 157 feet long, 27 beam, 531 tons, 70 horse-power, steamed 8 to 10 knots, and consumed 4 tons of coal daily.

Mr. Lambert's yacht "Wanderer" also circumnavigated the globe in 23 months, 1880–82. She was larger than the "Sunbeam," and carried 63 souls: her log summed up 48,490 miles between steam and sail, but she was only 280 days actually at sea.

YARN.

A.—British Yarn Exported.

Year.	Million Lbs.				Value, Thousands Omitted.	Lbs., Yarn Exported per Inhab.
	Cotton.	Woollen.	Linen and Jute.	Total.		
1821 . .	22	...	...	22	£2,306	1·1
1831 . .	64	2	1	67	4,270	2·8
1841 . .	119	4	18	141	8,362	5·2
1851 . .	144	14	19	177	9,071	6·3
1861 . .	178	28	28	234	14,468	8·1
1871 . .	194	44	50	298	23,641	9·5
1881 . .	255	30	36	321	17,693	9·2

Digitized by Google

B.—Prices of Yarn, per Lb. (Pence).

Year.	Cotton.	Woollen.	Linen.	Year.	Cotton.	Woollen.	Linen.
1831	22	26	19	1861	13	30	14
1841	14	29	12	1871	19	34	15
1851	12	25	12	1881	13	26	14

C.—Importers of Yarn (All Kinds).

	Million Lbs.	Lbs. per Inhab.
France	24	0·7
Germany	70	1·6
Russia	32	0·4
Austria	33	0·9
Italy	21	0·7
Spain	14	0·8
Holland	20	5·0
China	21	0·1
Various	162	...
	397	...

The exporters are—

	Million Lbs.		Million Lbs.
Great Britain	320	France	20
Belgium	42	Switzerland	15

Total . . 397 Million Lbs.

ZINC.

A.—Annual Production (Tons).

	Ore.	Metal.	Yield, per Cent.
Great Britain	57,000	15,947	28
Prussia	650,000	102,000	16
Belgium	250,000	45,000	18
Sweden	24,000	4,000	16
Russia, &c.	50,000	8,000	16
Total	1,031,000	174,947	17

B.—Zinc Industry of Great Britain.

Year.	Tons.					Value, per Ton.
	Production.	Imported.	Total.	Exported.	Home Use.	
1831	700	3,800	4,500	3,100	1,400	£14
1851	3,900	18,600	22,500	4,500	18,000	21
1871	4,960	20,930	25,890	8,060	17,830	18
1881	15,950	46,100	62,050	10,700	51,350	15

Digitized by Google

APPENDIX.

AGRICULTURE.

(1.) The product of 100 acres in various forms is as follows, per annum :—

Sheep-farming . . .	5,000 lbs. meat	will	support	50 persons.
Wheat	2,500 bushels	„	„	250 „
Potatoes	300 tons	„	„	520 „
Bananas and oranges .	320,000 bushels	„	„	995 „

(2.) The agricultural returns for breadstuffs in the United Kingdom in 1883 were :—

	Acres.		
	Great Britain.	Ireland.	United Kingdom.
Wheat. . .	2,613,100	94,800	2,707,900
Barley . .	2,291,900	183,700	2,475,600
Oats . . .	2,975,400	1,380,900	4,356,300
Potatoes . .	543,500	806,700	1,350,200
Total . .	8,423,900	2,466,100	10,890,000

(3.) The decline of agriculture in Ireland from 1881 to 1883 is shown thus :—

	1881.	1883.	Difference.
Acres arable .	5,212,000	4,960,000	252,000 less
„ pastures .	10,092,000	10,191,000	99,000 more
„ woods .	324,000	331,000	7,000 „
„ uncultivated	4,700,800	4,846,800	146,000 „
Total . .	20,328,800	20,328,800	...

(4.) The agricultural products of the United Kingdom in 1883 were :—

	Quantity.	Value.
Wheat, bushels . .	70,300,000	£21,100,000
Barley „ . .	81,800,000	18,400,000
Oats „ . .	132,200,000	23,800,000
Various „ . .	27,900,000	3,450,000
Straw, tons . .	10,400,000	11,600,000
Potatoes „ . .	4,440,000	14,600,000
Hay and sundries .	...	43,200,000
Total		£136,150,000

The product of meat, dairy, hides, wool, &c., was 127 millions £, forming with the above a total of 263 millions.

Digitized by Google

ARMY.—The number of men dismissed from the British army for bad conduct has been :—

Year.	No.	Year.	No.
1872	1,694	1878	1,811
1874	1,648	1880	1,826
1876	1,682	1882	1,294

There were 8332 courts-martial in 1882.

ARTILLERY.—In the famous duel at Meppen (1880) the Krupp steel cannon beat the Woolwich Infant, viz. :—

	Krupp.	Woolwich.
Guns, tons	71	80
Powder, lbs.	451	460
Shot, lbs.	1,709	1,705
Energy, foot tons	32,332	31,527

The initial velocity per second was 1626 feet Woolwich, and 1648 feet Krupp. The new Woolwich guns, 18 ton, 9¼ inch, with 140 lbs. powder, 380 lbs. shot, and initial velocity 1731 feet per second, penetrated 15½ inches armour-plate at 1000 yards. Krupp's 9½ inch guns at Meppen penetrated 18 inches of armour; Woolwich 11¼ inch failed to do so (see p. 326). The Russians made last year a 50 ton 12 inch gun, 313 lbs. powder, 810 lbs. shot, cost £8000. The French have just cast five 98-ton steel breechloaders, to use shot 1720 lbs, powder 615 lbs. charge.

AUTHORS.—Goldsmith received £60 for the "Vicar of Wakefield;" Moore, £3100 for "Lalla Rookh;" Victor Hugo, £2400 for "Hernani;" Chateaubriand £22,000 for his works; Lamartine, £3200 for "Travels in Palestine;" Disraeli, £10,000 for "Endymion;" Anthony Trollope, £63,000 for 45 novels; Lingard, £4300 for his "History of England."

BANKS.

(1.) Bank of France returns in January 1883 showed in millions £ as follows :—

Bullion	Deposits	Issue
£81·1	£15·9	£116·5

(2.) Banks of United Kingdom showed in June 1883 circulation (thousands omitted) :—

Bank of England	£25,400	English banks	£28,700
Joint-stock	1,700	Irish ,,	6,750
Private	1,600	Scotch ,,	5,990
England	£28,700	United Kingdom.	£41,440

Digitized by Google

(3.) Banks of Italy in December 1882 showed (thousands omitted):—

Capital paid up	£6,000	Discounts	£11,000
Issue	17,700	Italian stocks	6,000
Deposits	3,100	Cash	6,600
Bullion	4,400	Net profit	417

In the above summary cash includes the amount in bullion.

(4.) Banks of Australia in March 1883 (thousands omitted):

Colony.	Deposits.	Discounts.	Total.	Ratio, Per Cent.
Victoria	£24,250	£26,180	£50,430	32
New South Wales	22,880	25,010	47,890	30
New Zealand	8,510	15,420	23,930	15
South Australia	5,030	9,610	14,640	9½
Queensland	5,780	7,490	13,270	9
Tasmania	3,050	2,340	5,390	3½
West Australia	510	620	1,130	1
Total	£70,010	£86,670	£156,680	100

(5.) Banks of Canada in June 1883 (thousands omitted):—

Province.	Deposits.	Discounts.	Total.	Ratio, Per Cent.
Quebec	£11,100	£18,300	£29,400	52
Ontario	8,400	13,500	21,900	38
Nova Scotia, &c.	1,900	3,800	5,700	10
Total	£21,400	£35,600	£57,000	100

BEER.—Consumption in United States in 1881 reached 424 million gallons, or 8 gallons per inhabitant; production about the same.

BILLS.—The number and amount of bills stamped in United Kingdom for year ending March 1883 showed a decline of about 15 per cent. from the year of extraordinary inflation ending March 1874.

Amount.	Number, Thousands Omitted.		Amount, Millions £.	
	1874.	1883.	1874.	1883.
Under £5	1,390	1,098	4	3
£5 to £50	4,103	3,735	90	82
£50 to £100	1,672	1,262	101	76
£100 to £1000	2,438	2,110	1,072	928
Over £1000	292	198	438	297
Total	9,895	8,403	1,705	1,386

Digitized by Google

It is to be observed that the sum of 1386 millions in 1882–83 would have bought the same quantity of merchandise as the sum of 1755 millions in the year ending March 1874, the difference or fall in value being 21 per cent (see *Prices*, page 374). The decline in business is, therefore, imaginary.

BLIND.

(1.) The ratio in the United Kingdom is said to be :—

1 in 3300	inhabitants	over	20	years	of age.
1 in 770	„	„	40	„	„
1 in 200	„	„	60	„	„
1 in 50	„	„	80	„	„

(2.) Blind in United States :—

Year.	Number.	Per 100,000 Inhab.	Ratio of Sexes.	
			Male.	Female.
1850 . . .	9,790	42	55	45
1860 . . .	12,660	41	58	42
1870 . . .	20,320	53	56	44
1880 . . .	48,930	97	55	45

BLOOD.—The heart beats 74 times a minute, sending each time 10 lbs. of blood through the veins and arteries: the human system of an adult averages 28 lbs. of blood.

BOOKS.—Mr. Quaritch paid £1600 for a Bible dated 1462, at the Duke of Marlborough's sale in 1881.

BRIDGES.

(1.) The Brooklyn Bridge has been completed at a cost of £3,100,000, having taken 13 years in construction, during which 20 lives were lost, including the constructor (Roebling). Length 6000 feet, width 85, height above water 135. Weight 34,000 tons. There are 3200 tons wire, section 580 square inches, strength 75 tons per square inch. Each of the 4 cables has 5000 wires of one-8th inch. There are 2 towers, 274 feet high, and 1600 feet apart. The central way is 15 feet wide, for pedestrians; each of the railway lines has 16 feet width, and each of the ways for waggons, horses, &c., 19 feet; in all 85 feet.

(2.) The Forth Bridge (Scotland) is to cost £1,500,000. Main girder, 5330 feet; total length, 2700 yards. Heaviest train deflection 4 inches. Wind pressure of 30 lbs. per square foot will bend bridge 9 inches aside. Superstructure 42,000 tons steel, approach 3000 tons iron and 125,000 cubic yards masonry.

Digitized by Google

BUFFALOES.—There are 72,000 in Austria-Hungary.

BUTTER.—An English cow giving 1800 quarts milk per annum, produces 140 lbs. butter. During the year she eats 8000 lbs. hay, which contain 168 lbs. fat.

CANAL (SUEZ).—The nominal capital and sums actually realised were :—

Date.	Issue.	At	Realised.
1860 . .	£9,360,000	100	£9,360,000
1868 . .	6,667,000	60	4,000,000
1871 . .	600,000	80	480,000
1880 . .	240,000	67	160,000
Total .	£16,867,000	83	£14,000,000

The capital consists of 8 millions sterling in original shares, and £8,867,000 in debentures : the dividends on the former in the last 9 years have been :—

Year.	Francs per Share.	Equal to, per Cent.	Year.	Francs per Share.	Equal to, per Cent.	Year.	Francs per Share.	Equal to, per Cent.
1874 .	25	5	1877 .	33	6·6	1880 .	47	9·4
1875 .	27	5·4	1878 .	31½	6·3	1881 .	68	13·6
1876 .	28½	5·7	1879 .	30	6·0	1882 .	81	16·2

The accounts for 1882 sum up thus :—

Receipts . . .	£2,530,000	Dividend . .	£1,293,000
		Khedive . .	190,000
Working expenses .	189,000	Founders . .	127,000
Inter. on debentures	533,000	Directors, &c. .	50,000
Sundry expenses .	81,000	Reserve . .	67,000
Total expenses .	£803,000	Profits . .	£1,727,000
Net profit . .	£1,727,000		

The traffic returns for 1880–81–82 showed thus :—

Year.	Vessels.	Gross Tonnage.	Dues.	Tons per Ship.
1880 .	2,026	4,345,000	£1,594,000	2,150
1881 .	2,727	5,794,000	2,051,000	2,130
1882 .	3,198	7,122,000	2,422,000	2,225

CAPITAL. *New Capital, Millions £.*

	1879.	1880.	1881.	1882.	4 years.
Great Britain . .	33	18	72	59	182
France . . .	122	63	91	25	301
Germany . . .	17	8	8	5	38
Russia . . .	57	24	21	5	107
Various . . .	24	75	77	57	233
Europe . .	253	188	269	151	861
United States . .	123	33	18	36	210
Total . . .	376	221	287	187	1,071

Digitized by Google

CARDS.—There are 60 factories in Germany, which produced 4½ million packs of playing cards in 1882.

CATTLE.

(1.) The United Kingdom in 1883 possessed the following:—

	Great Britain.	Ireland.	U. Kingdom.
Cows	5,962,800	4,096,000	10,058,800
Sheep	25,070,300	3,219,100	28,289,400
Pigs	2,617,700	1,351,900	3,969,600

The decline of live stock in Ireland since 1874 has been considerable:—

	1874.	1883.
Cows	4,124,800	4,096,000
Sheep	4,441,700	3,219,100
Pigs	1,099,200	1,351,900
Total	9,665,700	8,667,000

(2.) Cattle in Prussia (thousands omitted) were as follows:—

	1820.	1840.	1860.	1867.	1873.	1883.
Cows	4,310	5,030	5,490	6,020	8,640	8,736
Horses	1,280	1,510	1,590	1,880	2,271	2,403
Sheep	9,130	16,170	15,415	18,790	19,667	14,717
Pigs	1,460	2,120	2,570	3,760	4,296	5,802
Goats	210	380	690	1,070	1,481	1,672

It is impossible to ascertain increase, owing to territorial changes.

(3.) Cattle in France (thousands omitted), as follows:—

Year.	Horses.	Cows.	Sheep.
1812	2,330	6,770	23,220
1840	2,780	8,230	32,300
1850	3,020	9,940	34,100
1860	2,810	10,020	31,200
1880	2,833	11,480	23,370

(4.) United States Agricultural Report for 1883, as follows:—

	Number, Thousands Omitted.	Millions $.	$ per Head, Value.
Milch cows	13,125	397	30
Other ,,	28,046	611	22
Horses	10,838	765	70
Mules	1,871	149	80
Sheep	49,237	124	2½
Pigs	43,270	292	7

These figures (except pigs) are much beyond those of the Census Report for 1880 (see page 76).

Digitized by Google

CHARCOAL.—The consumption in Hungary averages 2 million tons per annum.

CHARITIES.—The income of charitable institutions in France has been :—

Year.	Amount.	Year.	Amount.
1833 . . .	£2,050,000	1871 . . .	£3,955,000
1861 . . .	4,140,100	1879 . . .	4,102,000

CLEARING-HOUSE.

(1.) The London Clearing-house for year ending March 1883 showed 6189 millions, being 3 per cent. less than in 1882.

(2.) The Melbourne Clearing-house showed 141 millions for 1882, coming therefore before Manchester.

COMMERCE.

(1.) The trade of the world in 1882 was as follows :—

	Millions £.			Per Inhab. £.	Balance of Trade.	
	Imports.	Exports.	Total.		Imports.	Exports.
United Kingdom	347	241	588	17	100	69
France	199	144	343	9	100	72
Germany . . .	158	162	320	7	100	103
Russia	59	48	107	1¼	100	82
Austria	67	75	142	4	100	112
Italy	54	46	100	3½	100	85
Spain	20	22	42	2½	100	110
Portugal . . .	8	6	14	3	100	75
Belgium . . .	67	52	119	22	100	78
Holland . . .	67	59	126	31	100	89
Scandinavia . .	31	23	54	6	100	74
Roumania . . .	11	10	21	4	100	91
Europe . . .	1,088	888	1,976	6½	100	82
United States .	151	156	307	6	100	103
Canada	25	21	46	10	100	84
Australia . . .	53	50	103	34	100	94
South Africa . .	12	9	21	20	100	75
India	47	82	129	1	100	174
China	25	23	48	...	100	92
Egypt	7	14	21	4	100	200
South America .	48	53	101	4	100	110
Total . . .	1,456	1,296	2,752	...	100	89

Digitized by Google

(2.) United Kingdom (1882).

Trade with	Amount, Millions £.			Ratio of Total.	Balance of Trade, Millions £.	
	Imports from.	Exports to.	Total.		Surplus Imports.	Surplus Exports.
France . .	39·1	17·4	56·5	8·7	21·7	...
Germany . .	25·3	18·7	44·0	6·7	6·6	...
Russia . . .	21·1	5·8	26·9	4·2	15·3	...
Austria . .	2·0	0·7	2·7	0·4	1·3	...
Italy . . .	3·5	6·5	10·0	1·5	...	3·0
Spain . . .	11·7	3·8	15·5	2·4	7·9	...
Portugal . .	3·8	2·1	5·9	0·9	1·7	...
Belgium . .	14·8	8·1	22·9	3·5	6·7	...
Holland . .	25·3	9·4	34·7	5·3	15·9	...
Denmark . .	5·2	2·2	7·4	1·1	3·0	...
Swed. & Nor.	11·7	3·6	15·3	2·4	8·1	...
Turkey . .	4·8	6·4	11·2	1·7	...	1·6
Roumania .	4·9	1·0	5·9	0·9	3·9	...
Greece . .	1·8	1·1	2·9	0·4	0·7	...
Europe .	175·0	86·8	261·8	40·1	88·2	...
U. States . .	87·9	31·0	118·9	18·3	56·9	...
Brazil . . .	6·5	6·9	13·4	2·1	...	0·4
River Plate .	2·0	5·7	7·7	1·2	...	3·7
Chile . . .	3·4	2·9	6·3	1·0	0·5	...
Peru . . .	2·7	1·0	3·7	0·6	1·7	...
China . . .	9·9	4·6	14·5	2·2	5·3	...
Egypt . . .	7·7	2·5	10·2	1·6	5·2	...
Various . .	17·4	15·4	32·8	5·0	2·0	...
Foreign .	312·5	156·8	469·3	72·1	155·7	...
Australia . .	25·1	25·3	50·4	7·6	...	0·2
India . . .	39·9	29·0	68·9	10·4	10·9	...
Canada . .	10·3	9·7	20·0	3·1	0·6	...
Cape . . .	6·3	7·5	13·8	2·1	...	1·2
Singapore .	4·6	2·3	6·9	1·1	2·3	...
West Indies .	4·4	2·3	6·7	1·0	2·1	...
Various . .	8·8	8·6	17·4	2·6	0·2	...
Colonies .	99·4	84·7	184·1	27·9	14·7	...
Total .	411·9	241·5	653·4	100·0	170·4	...

In the preceding table the exports do not include any other than British products, although the imports include goods in transit worth 65 millions sterling. The total exports, therefore, amounted to 306½ millions, which, added

Digitized by Google

to the imports, shows a gross trade of 718 millions, or a net trade of 588 millions, not including goods in transit (counted twice over). The balance of trade was 347 millions imports to 241 millions exports, and as the carrying trade, commissions, &c., are in our hands, the real balance stood thus :—

	Millions £.
Imports, 347 millions, cost (20 per cent. reduction) .	277
Exports, 241 millions (plus 20 per cent. profit) . .	289
Balance in favour of Great Britain	12

See *Balance of Trade*, page 30.

(3.) The commerce of Germany in 1881 was as follows :—

	Thousands Omitted.		
	Imports from.	Exports to.	Total.
Austria . .	£22,100	£16,210	£38,310
Great Britain .	18,270	22,510	40,780
Russia . .	16,830	9,610	26,440
France . .	12,640	16,500	29,140
Holland . .	12,410	12,020	24,430
Belgium . .	10,740	8,520	19,260
United States .	8,840	9,770	18,610
Switzerland .	7,830	9,020	16,850
Various . .	41,540	53,940	95,480
Total . .	£151,200	£158,100	£309,300

The trade of 1882 consisted of the following items :—

	Thousands Omitted.	
	Imports.	Exports.
Cattle . . .	£11,350	£7,450
Food . . .	41,510	26,100
Coal . . .	2,100	3,510
Manufactures and raw materials .	103,274	125,176
Total . . .	£158,234	£162,236

CO-OPERATIVE SOCIETIES.—At the death of Mr. Schultz-Delitsch in 1883, the societies founded on his model were 3800 in number, with a reserve fund of 9 millions sterling.

COTTON.—The area under cotton in United States is increasing very rapidly :—

Year.	Acres.	Crop, Million Lbs.
1881 . .	13,613,000	3,161
1882 . .	16,590,000	3,550
1883 . .	17,452,000	3,880

Digitized by Google

COTTON GOODS.

Exported from United Kingdom in 1882.

	Cloth, Million Yards.	Yarn, Million Lbs.	Value, Thousands Omitted.
India	1,522	42	£19,400
China	402	15	5,200
Turkey and Egypt	434	26	6,500
Brazil	221	...	1,020
West Indies	131	...	1,900
River Plate	119	...	1,710
Central America	137	...	1,680
Chile and Peru	121	...	1,530
Singapore	123	...	1,320
Italy	76	17	1,810
Germany	39	36	2,780
France	61	7	1,620
Java	100	...	1,330
Australia	102	...	1,940
Various	761	95	18,590
Total	4,349	238	£68,330

The exports comprised 2961 million yards white and 1388 million yards coloured goods.

The value of cotton goods manufactured in United States in 1880 was only £54,000,000, instead of £74,000,000, as stated in page 113.

CRIME.—There are 18,200 convicts in French prisons, who work on an average 240 days per annum, earning about 5 pence per day, of which one-half is kept for the convict's use.

DEAF-AND-DUMB.—The returns for the United States since 1850 show :—

Year.	Number.	Per Million Inhab.	Ratio of Sex. Males.	Females.
1850	9,803	427	55	45
1860	12,820	413	55	45
1870	16,205	422	55	45
1880	33,880	678	56	44

DEATHS, VIOLENT.—These are made up in Belgium, as follows :—

Murders	90
Suicides	388
Drowned (accidental)	583
Various accidents	1,516
Total	2,577

Digitized by Google

DEBTS.

(1.) The British national debt in March 1883 comprised :—

Consols, 3 p. c. .	£395,710,500	Bank debts . . .	£13,645,900
New do., ,, .	201,440,700	Termin. annuities	27,570,900
Reduced do., 3 p. c.	91,677,800	Exchequer bills .	8,754,400
New do., 3½ p. c. .	225,700	Treasury bills . .	5,431,000
New do., 2½ ,, .	9,998,400	Savings banks . .	1,804,400

Total amount, £756,259,700, from which deduct £32,491,000 recoverable securities : net debt, £723,768,700.

(2.) The local debt of Great Britain on page 138 was in December 1880, and it rose in January 1882 to £163,501,000, viz. :—

	England.	Scotland.	Great Britain.
December 1880 . . .	£136,900,000	£16,300,000	£153,200,000
January 1882 . . .	144,335,000	19,166,000	163,501,000
Increase during 1881	£7,435,000	£2,866,000	£10,301,000

The Scotch local debt is composed thus :—

Burgh boards	£8,446,000
Harbour ,, ...	7,003,000
School ,, ...	2,233,000
Parochial, &c.	1,484,000
Total	£19,166,000

(3.) The French national debt has been caused as follows :

	Millions £.
Crimean war	93
Italian and Mexican wars	41
Franco-German war	316
Roads and bridges	188
Railways	41
Sundries	234
Total debt	912

The local debt of France has quadrupled in 20 years :

Year.	Paris.	Communes.	Total.
1862 . .	£13,702,000	£13,680,000	£27,382,000
1882 . .	85,300,000	30,290,000	115,590,000

(4.) The Russian national debt has been caused as follows :

	Millions £.
Redemption of serfs	85
Railways and telegraphs . . .	156
Crimean war	142
Turkish ,, ...	133
Sundries	37
Total debt	553

Digitized by Google

(5.) The United States paid off 28½ millions of debt in the year ending June 30th, 1883, viz. :—

Amount, June 30th, 1882 . .	£351,100,000
,, ,, 1883 . .	322,550,000

It is probable the whole will be paid off in 10 years.

(6.) The increase of debt in Australia since 1860 appears as follows (thousands omitted) :—

				Ratio in 1882.	
	1860.	1870.	1882.	Per Inhab.	Debt, Percentage to Wealth.
New South Wales	£3,830	£9,681	£18,897	£23	9·9
Victoria . .	5,118	11,925	22,593	24	12·4
New Zealand .	594	7,842	29,660	57	28·7
South Australia .	870	1,944	11,482	36	19·1
Queensland . .	...	3,509	13,125	52	32·2
Tasmania . .	...	1,269	2,444	20	15·1
West Australia .	...	...	511	15	10·2
Total .	£10,412	£36,170	£98,712	£32	16·4

If the value of Crown lands were included in wealth, the debt ratio would not be so high, but the wealth here taken is 598 millions sterling, irrespective of 446 millions represented by Crown lands.

DOCKS.—The opening of new docks at Cardiff has been accompanied by an increase of shipping, the tonnage cleared showing as follows :—

Year.	Tons.	Year.	Tons.
1852 . .	933,000	1872 . .	2,921,000
1862 . .	2,305,000	1882 . .	6,110,000

The clearances from Cardiff exceed the whole tonnage of the Suez Canal trade.

DROUGHT.

1214. Thames dry at London, crossed afoot.
1528–30. No rain in France, crops lost.
1719. All rivers in France ran dry.
1803. Seine dry at Paris, crossed afoot.

EDUCATION.

(1.) In England and Wales the progress made in 10 years appears as follows :—

	1872.	1882.	Increase.
Schools	9,854	18,289	8,435
Registered pupils . .	1,969,000	4,190,000	2,221,000
Average attending .	1,336,000	3,015,000	1,679,000

Digitized by Google

The average attendance was 68 per cent. in 1872, and 72 per cent. in 1882. The Treasury grants in 1882 were :—

Church of England schools	£1,318,000
Board schools	813,000
Wesleyan, &c., schools	334,000
Roman Catholic „	137,000
Total	£2,602,000

(2.) The degree of instruction in the French army has been :

Year.	Could Read.	Year.	Could Read.
1830	54 per cent.	1860	74 per cent.
1840	61 „	1875	79 „
1850	68 „	1881	82 „

ELECTRIC SCIENCE.

(1.) The *Magasin du Louvre* at Paris finds the cost of lighting to be—Gas, 100 ; Edison light, 75 ; Jablochkoff, 55.

(2.) The first electric railway in the United Kingdom was opened from Belfast to Giants' Causeway in September 1883.

(3.) The first electric screw-boat made a trip on the Thames at Greenwich, July 1883 ; speed 9 miles an hour.

EMIGRANTS.—The statement of settlers arrived in United States shows as follows :—

Arrived in 1883.		Landed in 1882.	
Germans	192,000	At New York	502,000
English	100,200	„ Huron	71,000
Canadians	65,100	„ Boston	58,000
Irish	64,400	„ Baltimore	42,000
Scandinavians	52,200	„ Philadelphia	36,000
Italians	32,500	„ San Francisco	33,000
Various	92,700	„ Various ports	28,000
Total	599,100	Total	770,000

FINANCES.

(1.) The British revenue and expenditure for year ending March 31st, 1883, compare with the previous year thus (thousands omitted) :—

	Revenue.			Expenditure.	
	1882.	1883.		1882.	1883.
Customs	£19,287	£19,657	Debt	£29,666	£29,679
Excise	27,240	26,930	Army	15,738	15,140
Stamps	11,384	11,841	Navy	10,561	10,260
Taxes	2,725	2,800	Wars	500	4,396
Income-tax	9,945	11,900	Civil List	18,548	18,892
Post-office	8,630	9,010	Post-office	4,973	5,339
Sundries	5,844	6,866	Sundries	4,720	4,689
Total	£85,055	£89,004	Total	£84,706	£88,395

Digitized by Google

(2.) The United States revenue and expenditure for year ending June 30th, 1883, compare with previous year as follows (thousands omitted) :—

Revenue.	1882.	1883.
Customs .	£45,780	£44,560
Inland Rev.	30,400	30,005
Sundries .	7,830	8,235
Total .	£84,010	£82,800

Expenditure.	1882.	1883.
Int. on debt	£14,760	£12,300
Administration	38,900	42,800
Total .	£53,660	£55,100
Surplus	£30,350	£27,700

The surplus was devoted to redemption of debt, the amount paid off during the year amounting to £28,550,000; see page 500.

(3.) The Australian finances for 1860–1870 and 1882 showed thus :—

	Revenue (Thousands Omitted).			Ratio, Shillings per Inhab.		
	1860.	1870.	1882.	1860.	1870.	1882.
N. S. Wales . .	£1,881	£2,575	£7,363	105	102	188
Victoria . . .	3,082	3,262	5,770	114	89	126
New Zealand .	550	1,733	3,765	73	113	144
South Australia	504	860	2,242	81	93	142
Queensland . .	179	786	2,102	102	131	163
Tasmania . .	414	270	549	92	53	82
West Australia .	70	98	254	87	79	151
Total . . .	£6,680	£9,584	£22,045	101	97	146

FIREMEN.—There are 286,000 men in the various fire-brigades in France.

FISHERY. The Scotch fisheries have multiplied 14-fold since the time of the Napoléon wars, viz. :—

1805–10 . . Cured 90,000 barrels fish per annum
1881–83 . . „ 1,250,000 „ „ „ „

The ordinary value is 40 shillings per barrel.

FLAX.—The cultivation is falling rapidly in Ireland: 147,000 acres in 1881, and only 96,000 in 1883.

Digitized by Google

FOOD.—The consumption in French cities per inhabitant per annum is as follows:—

	Bread, Lbs.	Meat, Lbs.	Wine, Gals.		Bread, Lbs.	Meat, Lbs.	Wine, Gals.
Paris .	331	187	48	Lille .	493	112	6
Lyons .	383	161	51	Nantes .	591	101	35
Marseilles	541	139	41	Toulouse	388	122	39
Bordeaux.	363	156	46	Rouen .	407	134	11

FOREIGN RESIDENTS.—The United States Census of 1880 showed that the Germans constituted 15 per cent. of the population of Cincinnati, and 14 per cent. of New York. The number of Germans in the United States was 1,967,000, that of Irish, 1,855,000. The number of Irish in page 170 is incorrect.

FORESTS.

(1.) Deer forests cover 7 per cent. of Scotland, viz.:—

County.	Acres.	County.	Acres.	County.	Acres.
Perth .	255,000	Argyle .	220,000	Aberdeen	175,000
Inverness	260,000	Ross .	190,000	Various .	280,000

The average rent is 13 pence per acre, whereas sheep runs pay only 10 pence an acre.

GOLD can be beaten 1200 times thinner than printing-paper; one ounce will cover 146 square feet.

GRAIN.—The United States wheat crop in 1883 covered 38 million acres, yielding 424 million bushels; and the maize crop, 68 million acres, and 1710 million bushels.

HOSPITAL, GREENWICH.—Income £160,000, expenditure £148,000 per annum: surplus for widows.

MATCHES.—Sweden and Norway export 20,000 tons of wooden matches yearly, being nearly one-third of the quantity consumed in Europe per annum. The tax on matches in France averages fourpence per inhabitant.

MEAT.—Full-grown animals in England average as follows:—

	Meat.	Fat, &c.	Hide.	Total.
Cattle . .	680	356	84	1,120 lbs.
Sheep . .	91	43	18	152 „

Cows give from 70 to 160 lbs. tallow. The Liebig factory at Fray Bentos makes 1 lb. beef extract from 34 lbs. meat.

ORGAN.—Riga, 66 feet high, 7000 pipes, 4-horse power. Haarlem, 38 feet high, 8000 pipes.

Digitized by Google

POPULATION.

(1.) Population of the German Empire :—

State.	Population, Thousands Omitted.		Increase per Cent.	Pop. per Sq. Mile in 1880.	Ratio of Pop. in 1880.
	1875.	1880.			
Prussia . .	25,742	27,251	5·82	203	60·3
Bavaria . .	5,023	5,272	4·98	182	11·7
Saxony . .	2,760	2,970	7·61	512	6·5
Wurtemburg .	1,881	1,970	4·20	270	4·4
Alsace . . .	1,532	1,572	2·61	281	3·5
Baden . . .	1,507	1,570	4·20	257	3·5
Hesse . . .	884	937	6·01	312	2·1
Mecklenburg .	554	577	4·20	115	1·3
Hamburg . .	389	454	16·67	3,006	1·0
Small duchies, &c.	2,455	2,621	6·77	187	5·7
Total . .	42,727	45,194	5·78	215	100·0

(2.) Population of Australia (thousands omitted) :—

	1861.	1871.	1882.
New South Wales .	358	504	814
Victoria . . .	542	732	888
New Zealand . .	99	306	575
South Australia . .	127	186	291
Queensland . . .	35	120	267
Tasmania . . .	90	102	118
West Australia . .	16	25	32
Total . . .	1,267	1,975	2,985 .

A. M. D. G.

PRINTED BY BALLANTYNE, HANSON AND CO.
EDINBURGH AND LONDON.

Digitized by Google

Digitized by Google

Digitized by Google